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A FEASIBILITY STUDY TO INVESTIGATE THE INSTRUMENTATION,
ESTABLISHMENT, AND OPERATION OF A LEARNING LABORATORY FOR
HARD-OF-HEARING CHILDREN, FINAL REPORT.
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*DEAF RESEARCH, *LIPREADING, *EDUCABLE PHYSICALLY HANDICAPPED,
*AUDIOVISUAL INSTRUCTION, AURALLY HANDICAPPED,
REPETITIVE FILM SHOWINGS, LEARNING LABORATORY,
AUTOINSTRUCTIONAL AIDS, LINCOLN, NEBRASKA

TEN CHILDREN AGED 5-8 WERE SELECTED TO TEST A SELF-INSTRUCTIONAL, SELF-OPERATING SYSTEM TO DEVELOP LIPREADING SKILLS. THEIR HEARING DEFICIENCY RANGED FROM HARD OF HEARING TO PROFOUNDLY DEAF. THE SYSTEM CONSISTED OF THREE STUDY CARRELS, AN 8-MM CARTRIDGE-LOADING SOUND MOTION PICTURE PROJECTOR, AND AN OBSERVATION BOOTH UTILIZING A ONE-WAY MIRROR. TWENTY-FIVE SOUND AND COLOR FILMS STRESSING SINGLE-WORD, ASSOCIATED-WORD, AND MULTIPLE-WORD INSTRUCTIONAL PATTERNS AND A SERIES OF FILM TESTS TO MEASURE THEIR ABILITY TO LIPREAD THE VOCABULARY PRESENTED WERE PRODUCED. EACH INSTRUCTIONAL PATTERN CONTAINED PRESENTATION, REVIEW, AND RESPONSE ELEMENTS. THE SYSTEM WAS EVALUATED THROUGH STUDENT CASE HISTORIES CONSISTING OF NEARLY 1,000 OBSERVATIONS COMPILED ON A DAILY BASIS. A SECOND EVALUATION TECHNIQUE CONSISTED OF PERIODIC FILMING OF THE REACTIONS OF THE STUDENT WHILE VIEWING THE FILM AND USING IT TO PRODUCE A 16-MM SPLIT-FRAME PRODUCTION FOR STUDYING THE STIMULUS (TEACHER) AND THE RESPONSE (STUDENT). THE RESULTS SHOWED THAT IT IS POSSIBLE TO ESTABLISH A TEACHING RAPPORT SIMILAR TO THAT WHICH CURRENTLY EXISTS IN FACE-TO-FACE TEACHING. CITED AS AREAS OF FURTHER RESEARCH ARE FIELD STUDIES, INSTRUCTION IN EXISTING CURRICULUM SUBJECTS, INVESTIGATION INTO THE INDEPENDENT LEARNING VERSUS SUPPLEMENTAL LEARNING MODES FOR UTILIZATION OF THE SYSTEM, NARRATION TECHNIQUES, THE TEACHER/STUDENT RELATIONSHIP ROLES, FUNCTIONAL DESIGN OF LABORATORY FACILITIES, DISPLAY MEDIA, AND ITS APPLICATION TO OTHER TYPES OF HANDICAPS. (HS)

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A FEASIBILITY STUDY TO INVESTIGATE THE INSTRUMENTATION, ESTABLISHMENT, AND OPERATION OF A LEARNING LABORATORY FOR HARD-OF-HEARING CHILDREN

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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A FEASIBILITY STUDY TO INVESTIGATE THE INSTRUMENTATION, ESTABLISHMENT, AND OPERATION OF A LEARNING LABORATORY FOR HARD-OF-HEARING CHILDREN

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FOREWORD

The title under which this grant was funded probably is not as descriptive as it should be. The project actually explored a method for providing speechreading practice to acoustically handicapped children in a self-operational laboratory setting. The phrase "hard-of-hearing" was not selected to identify those children with only a slight degree of hearing loss, but was intended as a collective term to include all hearing impaired. As is explained in the project report, the students in the study ranged from a classification of hard-of-hearing to profoundly deaf. The results of this feasibility study have implications for acoustically handicapped persons, irrespective of the degree of their hearing loss. Also in the report the word "lipreading" is used interchangeably with "speechreading." The filmed lessons were designed to provide speechreading practice in its truest meaning, but for sake of variety in writing, both words are used.

This Final Report consists of an Introduction which presents a challenge for innovative application of instructional technology to the education of the deaf; the basic report which includes description of the project, discussion of feasibility, and summary comments; and several appendices which document the conclusions. Since this project was a study of behavior as well as an experiment in teaching lipreading to the deaf by using 8mm films, the evidence of feasibility is documented in the form of case studies. These case studies, along with a description of the instructional films and an analysis of the observation films, may be found in the Appendices.

A complete set of the 8mm speechreading films, in cartridges for use on the Fairchild projector, will be deposited in the Demonstration Center, U.S. Office of Education, Department of Health, Education and Welfare. Sets of this material will also be distributed by Captioned Films for the Deaf, U.S. Office of Education, Department of Health, Education, and Welfare. The twenty-seven observation films which use the split screen technique to document the study are on deposit at the Audiovisual Library, Bureau of Audiovisual Instruction, University of Nebraska, and may be obtained for previewing purposes from this agency.

The project director wishes to express his appreciation to his excellent staff, with special recognition to the two film teachers, Mrs. Ferne Ihfe and Mrs. Patricia Bolliger who were superb in their roles. High praise is also given to my office staff, Mrs. Ullstrom, Project Secretary, and to Mrs. Jensen, and Mrs. Carlson who assisted in the preparation of this final report.

The carefully written case studies, the hundreds of analytical observations, and the parent interviews were the outstanding work of our excellent evaluator, Mrs. Marie Focht.

Considerable praise should be given to the guidance and counseling provided by the Advisory Committee. One of the rewards of directing this project was the opportunity to work closely with these men--Drs. Hiskey, Kurtzrock, Lowell, Meierhenry, and Wiley. Their advice had a marked influence on the scope of the project.

The splendid cooperation of the Lincoln Public Schools also deserves special mention. Besides the approval and support of the administrators, the staff of Prescott School willingly adjusted their procedures to allow for the many interruptions that are created by a special project. Thanks also goes to the parents for granting permission to photograph and study their children's reactions to this method of teaching. The researcher is indebted to Mrs. Dorothy Beal, Supervisor, Omaha Hearing School, Omaha, Nebraska, and her staff for permission to conduct a miniature field study at their school.

The project director was fortunate to be able to contract for the services of the motion picture production staff of University Photographic Productions, University of Nebraska. Mr. Kaz Tada, Manager, Mr. Brockford Gordon, Director, and Mr. John Werner, Sound Technician, gave invaluable assistance in solving the problems of production, both for the instructional film series and the observation films. Special credit goes to these men for producing, editing, and printing the split-screen observational films.

One other person should be mentioned for his assistance. After repeated failure by the project director to obtain the necessary laboratory equipment from the manufactureres, Mr. Edward J. Stovall, Stephenson's School Supply, Lincoln, Nebraska, furnished all the items at a rental rate far below the actual cost. Without this support the study would not have been possible.

Appreciation is also extended to the staff of the Bureau of Audiovisual Instruction, University of Nebraska, who carried an extra workload for the past year and a half in order that I might devote time to this project.

Finally a thank-you note to my wonderful family who seemed to understand why the task required my attention and thought seven days a week.

CHAPTER I
INTRODUCTION

STUDY CARREL

CHAPTER I

INTRODUCTION

The acoustically handicapped child in most respects is a normal child. He possesses more of the qualities associated with normalcy than characteristics associated with abnormality. Many of his behavioral responses are typical of those of his peers because he has learned to compensate for his hearing loss through the extension and integration of his other functioning sense organs. Because of these substitutions he may perceive the world in a delicate balance between likes and dislikes as these adjusted sensations reach the brain. As a result, he may have peculiar taste preferences for foods. His sense of smell is often acute. He may gain meaningful information tactually. His ability to manipulate and handle materials is usually a highly developed skill. His capacity to learn often exceeds that of children in his own age group. Potentially he has the ability to succeed, live a normal life, and make his contribution to society. His major weakness and the one which makes his education so difficult is his inability to hear spoken discourse.

Today's society has become so dependent on the language of sound that instruction without an auditory stimulus is practically non-existent. The visual forms of language with which early man learned to communicate have given way to more rapid forms of printing and recording, reading and speaking.

Although in the education of the deaf every effort must be made to utilize the residual hearing of the child, a major portion of his learning experience must depend on visualization of the idea, concept, event, or situation being taught.

To the deaf, the sense of sight becomes the main avenue by which communicative forms are transmitted to the brain, whether by the interpretation of gestures, fingerspelling, or lipreading. With vision as the accepted vehicle for communication, and thereby teaching, it could be assumed that carefully designed visual instructional materials would be readily available for teaching the deaf. Yet, teachers of the deaf are still searching for their own instructional pictures ---- the apparent best source being tear sheets from monthly popular magazines. Text books designed for the hearing child are still considered as basic readers for the deaf although the learning sequences are not identical. The materials essential for teaching the production of speech sounds quite often consist of whatever devices the teacher can find at home and bring to school. It is a common expression that "the deaf person must have listening eyes," yet the critical design and selection of visual teaching materials and the development of visual teaching systems have not been thoroughly researched. The application of the principles of iconography to a sequential form of visual instruction needs to be explored.

One application of an instructional media system may be observed in the current method of teaching foreign languages. To learn to speak a language the normal student must progress through a series of oral-aural learning experiences. His participation in these learning exercises, his opportunity for meaningful practice, and his involvement in a self-evaluation program are essential to acquiring the accepted language skills. As a result of a careful analysis of these learning experiences, the electronic language laboratory with its individual study booths was designed, developed, and constructed to meet these educational requirements. The student may now hear foreign language spoken by master teachers; he may record his own echoic responses; he may compare his responses with the master; he may restudy any sequence with which he has difficulty, and in the process may progress at his own learning rate. Thus, the introduction of an instructional media system into an integrated program for teaching foreign languages has greatly accelerated the process. Since current research indicates that a language can be learned quicker with an audio-lingual approach, it is only logical that technology should further refine the auditory language laboratory which facilitates meaningful practice for the acquisition of this skill.

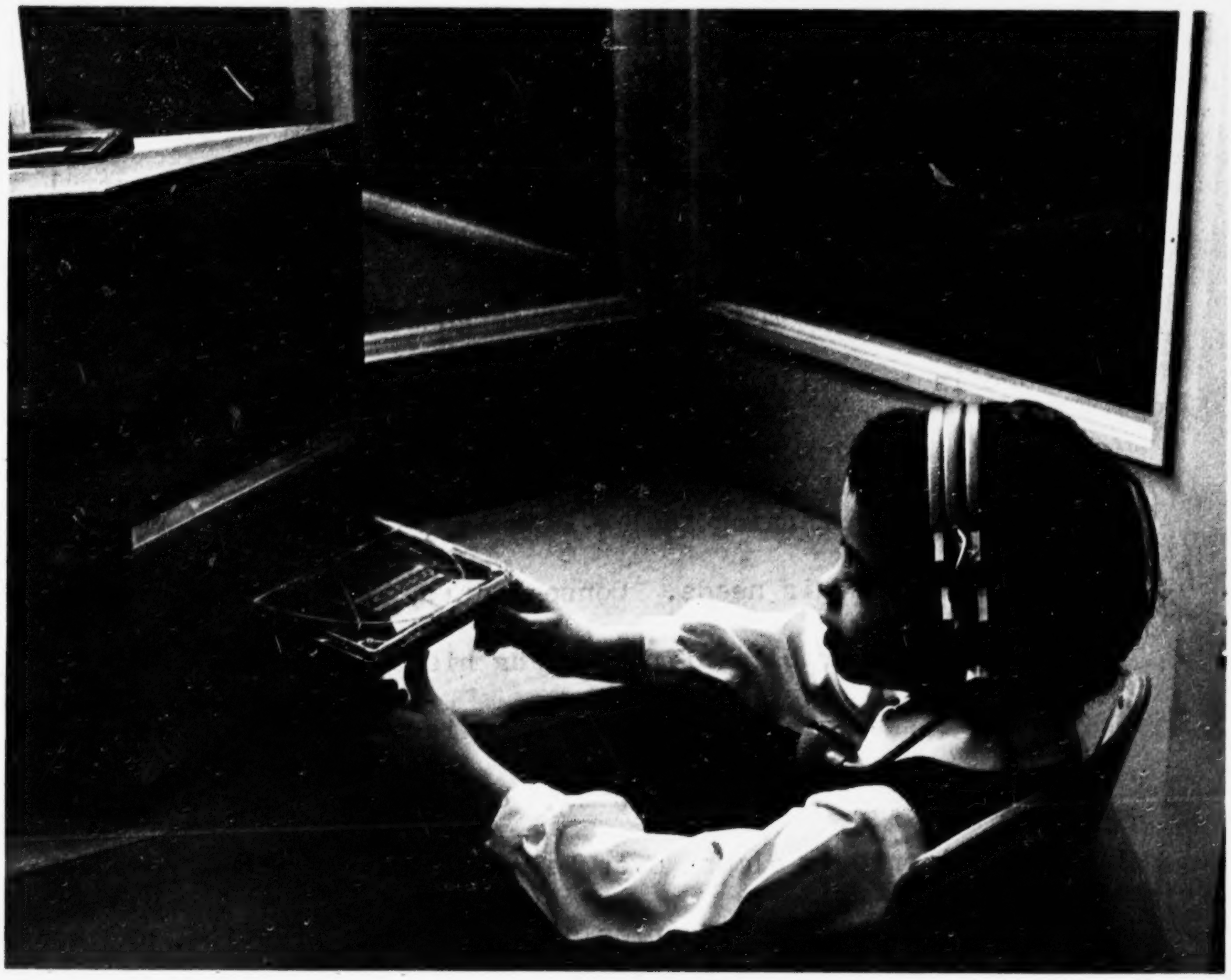
A similar analysis of the learning experiences necessary for the acoustically handicapped to acquire his communicative language and to grow intellectually would indicate areas in which instructional materials could make a unique contribution.

Almost in invitation to such innovative application of media, technology has developed instructional instruments which could provide a systems approach to the education of the deaf. These systems would not replace the unique role of the teacher in the education process, but would function as a valuable extension of the teacher, bringing visual evidence of the past and present, documenting experiments and reports, and providing invaluable practice, sequence, and repetition to the learning experience.

A well-designed instructional media system should be self-operational, self-instructional, and self-evaluational. The instrumentation should be so simple to operate, so easy to use, that children as young as four years of age could proceed in this phase of their instruction without assistance from the teacher. The materials, possibly in cartridges, should be planned to teach a single concept, designed for sequential presentation, and patterned for cyclic instruction. The format of the instructional plan should elicit overt responses from the learner, include self-check points, and confirmation of learning progress. Such a system would reinforce classroom work, accelerate student progress, offer a model for imitation, give a form of learning independence, enable patterned practice, make possible the integration of learning resources, and free the teacher to devote more time to tutorial instruction. A media system which could be used in the classroom, in the residential hall, and in the home would provide a continuity to the educational program of the deaf which heretofore has not been possible.

The communicative aspects of the education of the deaf have not received the attention of the researchers in comparison with the strides made in diagnostic analysis of hearing impairment. There is a need for a program of depth research into the design and production of instructional materials for teaching the deaf similar to the media programs now being developed in the major subject areas for teaching the normal hearing child.

CHAPTER II
PROJECT DESIGN



SELF-OPERATION

CHAPTER II

PROJECT DESIGN

Background

The hearing impaired student is one whose learning experiences must be carefully selected and directed. Although he usually has the potential learning capacity of the normal child, he has limited access to the world of knowledge because he is cut off from the avenue through which much early knowledge is transmitted. Such a child approaches the age of formal education handicapped by the fact that his most vital, fundamental, learning tool - language - is not developed to the extent of his needs. Consequently, he struggles with the compound problem of perfecting his communicative or language skills at the same time he is trying to assimilate a body of information which must be conveyed to him by language. The challenge is almost overwhelming. His teachers, in applying the venerable principles of repetition, practice, and use to each instructional item, cannot rely upon the incidental reinforcement of everyday situations, but must contrive situations deliberately which will reinforce the new as well as the old learning. Thus, learning continues at an optimum rate only so long as someone is present to conduct or supervise the instruction.

One vehicle by which the hearing impaired person can compensate for his communicative handicap is speechreading. Since his chances of achieving a nearly normal life are directly related to his success as a communicator, and since the role of observant listener accounts for at least half of the success, the hard-of-hearing person must rely on other means of perception of speech. He must develop "listening eyes."

The viewing of a person's lips and interpreting their movements into speech patterns are skills which can be developed, improved, and perfected. One of the problems in perfecting the skill of lipreading is the requirement of frequent, repetitive practice. Some training, of course, occurs with each item of communication and association, but all too often the practice required to make such learning permanent is limited to the time a teacher, tutor, or parent is available to help the child. Even these devoted people cannot offer the hours of instruction necessary to change random responses into carefully formulated terminal behavioral patterns.

The hard-of-hearing child needs a model which he can study at his learning convenience. He must not be restricted to only those experiences which are dependent upon the physical presence of a teacher/tutor. The challenge is to devise an instructional system which will permit, encourage and facilitate a self-operational program for developing speechreading skills for the acoustically handicapped.

Objectives

This feasibility study was designed to investigate selected factors pertinent to the instrumentation, establishment, and operation of a learning laboratory for the hard of hearing student. The program implemented was for teaching and developing lipreading skills for the acoustically handicapped. The investigation was to determine (1) the feasibility of operating the laboratory as a self-instructional, self-operational system for lower elementary children; (2) the feasibility of developing and practicing lipreading skills in a study booth without the physical presence of the instructor; (3) the instructional value of short, single concept, continuous loop, cartridge load, 8mm films for repetitive instruction and practice; (4) the functional design of learning laboratory facilities for individualized instruction for the hard of hearing student; (5) the behavioral reactions of the hard of hearing child to the utilization of such a system; (6) the possible use of a similar system in other subject areas, for other age levels, and for instructional problems related to the education of the hard of hearing student, and to recommend areas of further study and research into the use of instructional systems for the acoustically handicapped.

Location

The project was conducted at the Hard of Hearing Unit, Prescott School, Lincoln Public Schools, Lincoln, Nebraska. The motion pictures were produced in the studios of University Photographic Productions, University of Nebraska, Lincoln, Nebraska. Although not included in the original proposal, a two-month field test of the instructional system was conducted at the Omaha Hearing School, Omaha, Nebraska. No project funds were expended for this additional testing. A brief report may be found in Appendix E.

Population

Ten children in the lower elementary and middle elementary classrooms of the Hard of Hearing Unit, Prescott School, Lincoln Public Schools, Lincoln, Nebraska, comprised the experimental population for this feasibility study. The ages ranged from five to eight years of age. This distribution was as follows: three children - age 5+, two children - age 6+, four children - 7+, and one child - age 8+. (One child age 5+ and another child age 10+ moved from the city and participated in only the early stages of the experiment. Their progress from the beginning of the project to their departure is included in the Case Study Section.)

The hearing loss of these children could be classified at three levels, (1) hard of hearing (35-60 db loss across speech range), (2) severely deaf (80-95 db loss across speech range), and (3) profoundly deaf (95 db no response across speech range). The distribution of hearing loss was as follows: one child hard of hearing, four children severely deaf, and five children profoundly deaf. (No children in the study happened to be within the classification range called "severely hard of hearing" - 65 to 75 db loss across speech range.) An audiogram of each child is included as part of the Case Studies in Section 3, Appendix A.

The school information records indicate mental ability classifications ranging from low average to superior intelligence. This distribution was as follows: one child classified as low average, three children as average, four children as above average, and two children as superior level when compared with other deaf children their age.

Two of the children were multiply handicapped with the additional problem of cerebral palsy.

The experimental population represents a cross-section of the ages, abilities, and hearing deficiencies found in elementary education classes for the acoustically handicapped.

Learning Laboratory

The learning laboratory was installed in the lower elementary classroom, Prescott School, Lincoln, Nebraska. The laboratory consisted of three student study carrels with an 8mm cartridge load sound motion picture projector in each of these booths. A special observation room was constructed adjacent to these booths and provided a vantage point for the undetected observation of the students through one-way mirrors. A detailed description of these facilities may be found in Appendix C.

Instructional Materials Design

The success of the media system for teaching speechreading depended on the design of instructional materials which were to be the avenue of communication between teacher and learner. In a study of lip movements the logical choice of medium was the motion picture. Because of its compactness, convenience in handling, nominal production costs 8mm film was selected as the basic material.

At the inception of the study instructional films which could be utilized as an integral and continuing part of the daily classroom procedure were not available. Although films have been developed to test lipreading ability and in some cases augment instruction, suitable films dealing with single concepts and in a form that were readily accessible to students in the classroom could not be found. In order to test the feasibility of the proposed media system, twenty-five instructional films in 8mm sound and color were produced.

These films were grouped into three instructional patterns and a fourth series which served as the culminating tests for the project. The division was as follows:

(1) Single-Word-Emphasis Approach

(Stressing a selected vocabulary item)

(2) Associated-Word Approach

(Stressing an idea and its associated words)

(3) Multiple-Word Approach

(Stressing a general vocabulary for a subject classification)

(4) Film Tests

(Concluding tests measuring ability to lipread vocabulary presented)

All films were oriented to and photographed from the learner's viewpoint. The camera was positioned to give the student viewing the film the same eye contact as if he were observing his teacher in a typical tutorial situation. The intent of the composition was not only to provide a high degree of visibility for the reading of lip movements, but also to establish a rapport between film teacher and student reflective of normal teaching procedures. To ascertain the pictorial format which would simulate tutorial lipreading instruction, the project director, production staff and the film teacher rehearsed the first film production before a video camera at the Nebraska Psychiatric Institute, Omaha, Nebraska. The recording and re-recording of the instructional sequences greatly facilitated the film production.

The films were further refined to follow principles of visual programmed learning patterned from the current theories and practices of programmed instruction. Visual materials served as the "conversation piece" for the spoken visual narration and the basis for developing single concepts. The students progressed through a series of carefully planned, sequential filmed programs with opportunity for various responses. Built into the instructional format were periodic visual confirmations which functioned as learning reinforcements to the child. In the initial series, the films could be classified into three general types: presentation, review, and response. Basically the presentation films are straightforward lipreading lessons which permit repeated observations of the spoken vocabulary with visual reference to the object being presented. The review films are a regrouping of the resource materials into a different arrangement which enables further study of the same lip movements without exact duplication of film content. The response films vary in style but do require an overt reaction from the learner as an indication that he does understand and can read the lipreading material being presented. As the study progressed and the other series of films were produced, the three types --- presentation, review, and response --- were interwoven into a more intricate design requiring frequent participation. One of the purposes of the feasibility study was to discover student reactions to various instructional filmed situations.

The first filmed series was designed to assess the students' reactions to an approach based on word study. Since one possible application of the media system might be accelerating the development of vocabulary at the early stages of instruction, a simple four-word sequence was selected for the experiment. Although separate films were developed on each of the four words, this study is not advocating the isolated instruction of one word at a time, but used this repetitive approach to measure attention span, interest level, and general viewing habits. It was assumed that further variation in method and content, if carefully planned, would increase interest and attention span. This series was designed to form a baseline for the remainder of the study.

The four words selected were "car," "ball," "doll," and "tractor." A presentation film was developed on each word; cumulative review films were produced at intervals through the series, and periodic response films were also interspersed within the series. At the close of each presentation and review film the film teacher would select one of the objects represented by the word being taught and would place this object in a clear plastic container. For the response films the containers holding the objects were placed in the laboratory booth on designated shelves. The teacher in the response film instructed the student to remove the containers from the shelves and to place them in front of the projector. The seme identical containers and objects were visible in the lower portion of the film. The film teacher then proceeded to quiz the students about these words by asking, "Show me the ____________" or "Where is the __________?" The child, if he could lipread the words, would respond by pointing to the object in the container. After a pause, the film teacher would also point to the object and give confirmation that this was the correct response. The intent of this instructional procedure was to explore the potential of a self-administered instructional situation which involved manipulative skills.

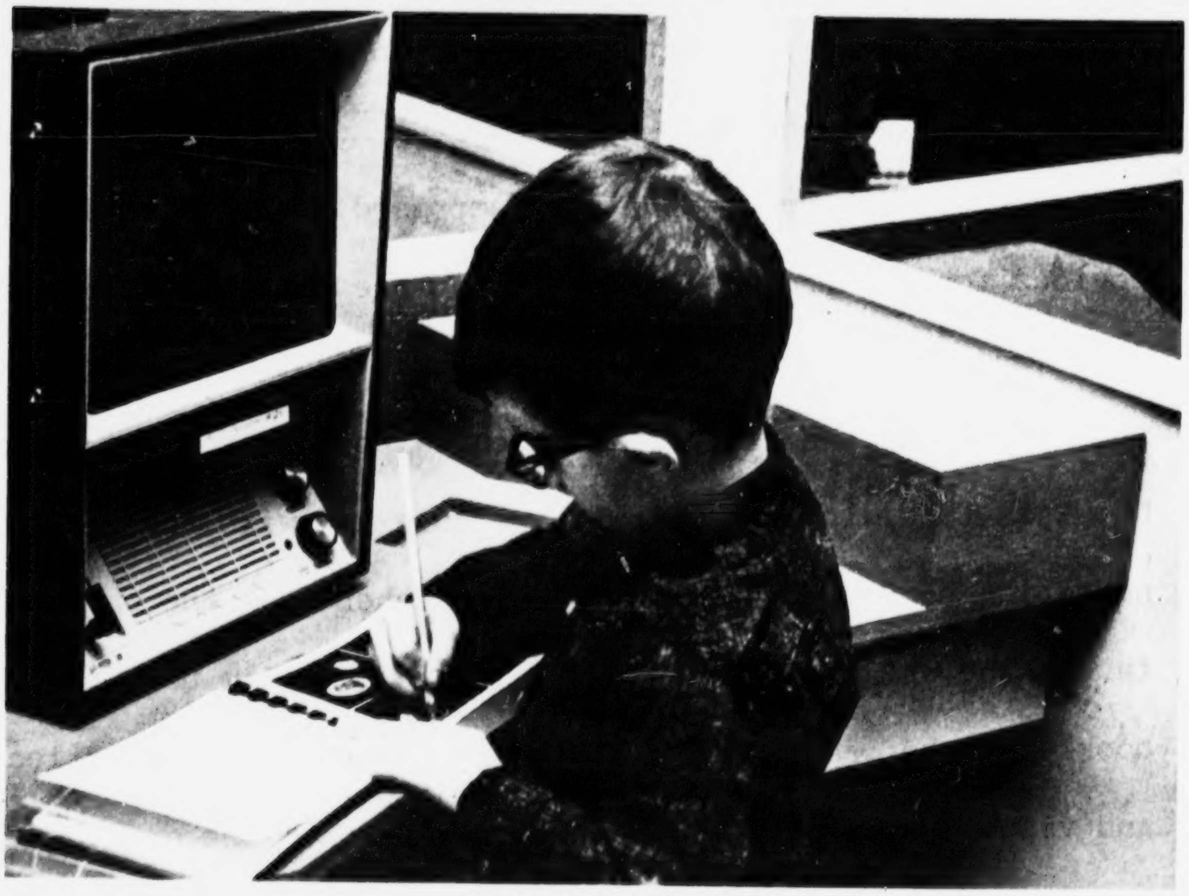
The second series was constructed around the development of a concept. For this study the concept of "left" and "right" was chosen. Five films were produced to include left and right relationships, such as part of the body and clothing; left and right in the sense of directions, and left and right in reference to placement. These films called for frequent responses on the part of the learner and employed a different form of visual confirmation. An elementary student, seated facing the teacher and with her back to the camera, was introduced into the scene. After a brief sequence to promote awareness that the student actor was in the film, the camera angle was established so that only the student actor's hands remained visible. The intent was for the learner to identify himself with the student actor and to interpret the teaching of left and right from his own viewpoint. As stated previously the camera was positioned

SINGLE WORD EMPHASIS APPROACH
RESPONSE FILM

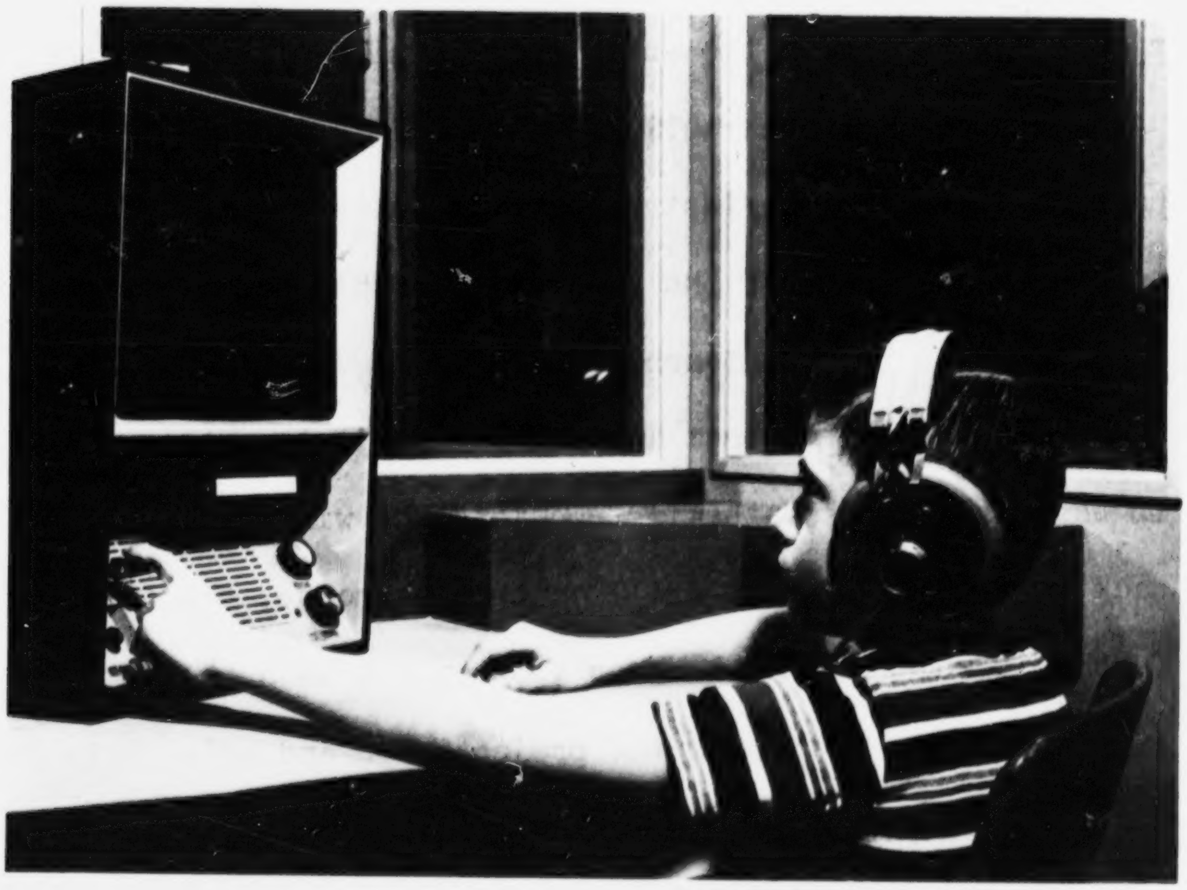
ASSOCIATED WORD EMPHASIS APPROACH
RESPONSE FILM

to be the eyes of the student looking at his teacher and in this series also located to witness the involvement of a third person, the student actor. At no time did the teacher relate left and right to her own body; she served only as the visible narrator for explaining and teaching the concept. Frequently the learner was asked to respond by holding up his right or left hand or to repeat aloud the words "left" or "right." Each time a response was elicited the student actor provided a delayed response to give confirmation to the learner. In the final film of the series a specially designed light box was used to measure the learner's understanding of the concept and his ability to lipread the associated words. The box had two push buttons which controlled the lighting of the words "left" and "right." The film teacher asked the learner to push the button in response to "Which way did it go?" or "Which one is this?" The student actor also gave a delayed response and lighted the proper word response in the film. This type of confirmation determined the advancement of the learner and also offered him verification of his progress. The intent of this instructional procedure was to explore the potential of a self-administered instructional situation which required the transfer of the understanding of an abstract concept into an overt action.

The third series of films was planned to teach subject matter vocabulary by a multiple-word approach. The subject area selected was Foods and this particular unit consisted of separate films produced for breakfast, luncheon, and dinner meals. In each, the scene was a place setting at a table arranged so that the learner could assume that this was his meal being served. The film teacher seated at the opposite side of the table facing the camera proceeded to narrate the serving of the meal. The use of actual food items and the accompanying visual narration provided a realistic situation for teaching the names of the common foods served at these three meals. The review film reemphasizing the same foods was centered around a cafeteria setting. The foods were visible on a counter and the film teacher selected the items of her meal in a different sequence than presented in the other films. This dramatized situation permitted a review without obvious repetition. The last film in the sequence required a different form of response. A full color, multiple-choice, foods test booklet was prepared. Each page was composed of four colored pictures of the identical foods used in the film. The booklet and a marking pencil were placed in the laboratory booth. The film teacher instructed the learner to open the booklet to page one and "Draw around ________." If the child could lipread the spoken word and follow the directions given, he would choose from the four pictures and draw around his selection. Teacher then instructed the child to turn to page two and continue on the test until all twenty-one pages were completed. The intent of this instructional procedure was to explore the potential of a



MULTIPLE WORD EMPHASIS APPROACH
RESPONSE FILM



EQUIPMENT OPERATION FILM

self-administered instructional situation which required a pencil-paper type of test response.

The fourth group of films comprised the final measuring devices for the project. For testing the lipreading of the four-word vocabulary a response film was designed involving the objects in the clear plastic containers previously described, but this time without manipulative cues and with the visual narration performed by a different teacher from the one who taught the original lessons. The food test film used the same booklet as before but in a different sequence of word selection and visually narrated by another teacher from the one who taught the unit.

The final film tested the "on" and "off" operation of the projector by the child and also the understanding of left and right. In this film the autostop mechanism of the projector is used. The film teacher elicited several left and right show-of-hand responses before instructing the learner that the film teacher would turn off the projector and he, the learner, must turn it back on. The teacher in the film visually turns off the projector and at that instant the projector stops running. If the child lipreads the instructions, he will turn the projector back on. After a short drill on this response, the film teacher further instructed the learner as to which hand he was to use in the process of turning the projector on and off. This film was not only a test of lipreading ability, but also a study of the child's reaction to a completely new situation for which he has had no previous learning experience. He had learned to turn the projector on and off; he had learned to distinguish between his left and right hand. This is a test of his ability to transfer gained knowledge into a different learning situation. The autostop feature of this projector offers many opportunities for a form of visual programming which could elicit a variety of manipulative responses.

One of the twenty-five instructional films was separate from the reported series and was produced to teach the students how to operate the 8mm motion picture projector. This film utilized the visible narrator lipreading format and also visually demonstrated how to operate the machine. Close-up cuts were employed extensively in this film. This film was used at the beginning of the project to expedite the explanation of the operating instructions. Actual practice operating the projector followed the viewing of the film.

A description of each film may be found in Section 2 of Appendix A.

Evaluation

Since this project was a feasibility study to explore several variations of 8mm film utilization in teaching lipreading, a carefully documented plan was designed for evaluating the student responses. Three types of information were compiled about each participant. A personal inventory record was completed for each child. This record contained family information, medical history, a personal adjustment scale, social adjustment, in-home education, and out-of-school experiences. Parents of each child were interviewed to obtain this information, which provided valuable insight to the psychological, sociological, and educational behavior of the child. A school information record was also maintained on each child. The parent inventory record and the school information record provided the bases for interpreting the child's reactions to this particular system of teaching lipreading. An evaluation record of the child's viewing habits was prepared periodically by the evaluator as the measuring instrument, with attention span and interest level as one criterion and response rate and response patterns as another criterion. Each pair was plotted on a grid with minutes of viewing time as the "x" axis and a five-point rating scale as the "y" axis. A behavioral profile of each child has been maintained throughout the project. Sample evaluation forms may be found in Appendix E.

One means employed to document the behavioral reactions of the students was the periodic filming of the learner viewing the films in the laboratory setting. These observations ranged from the initial reaction of their first viewing, through selected films in each series, to the final test films. At the same time

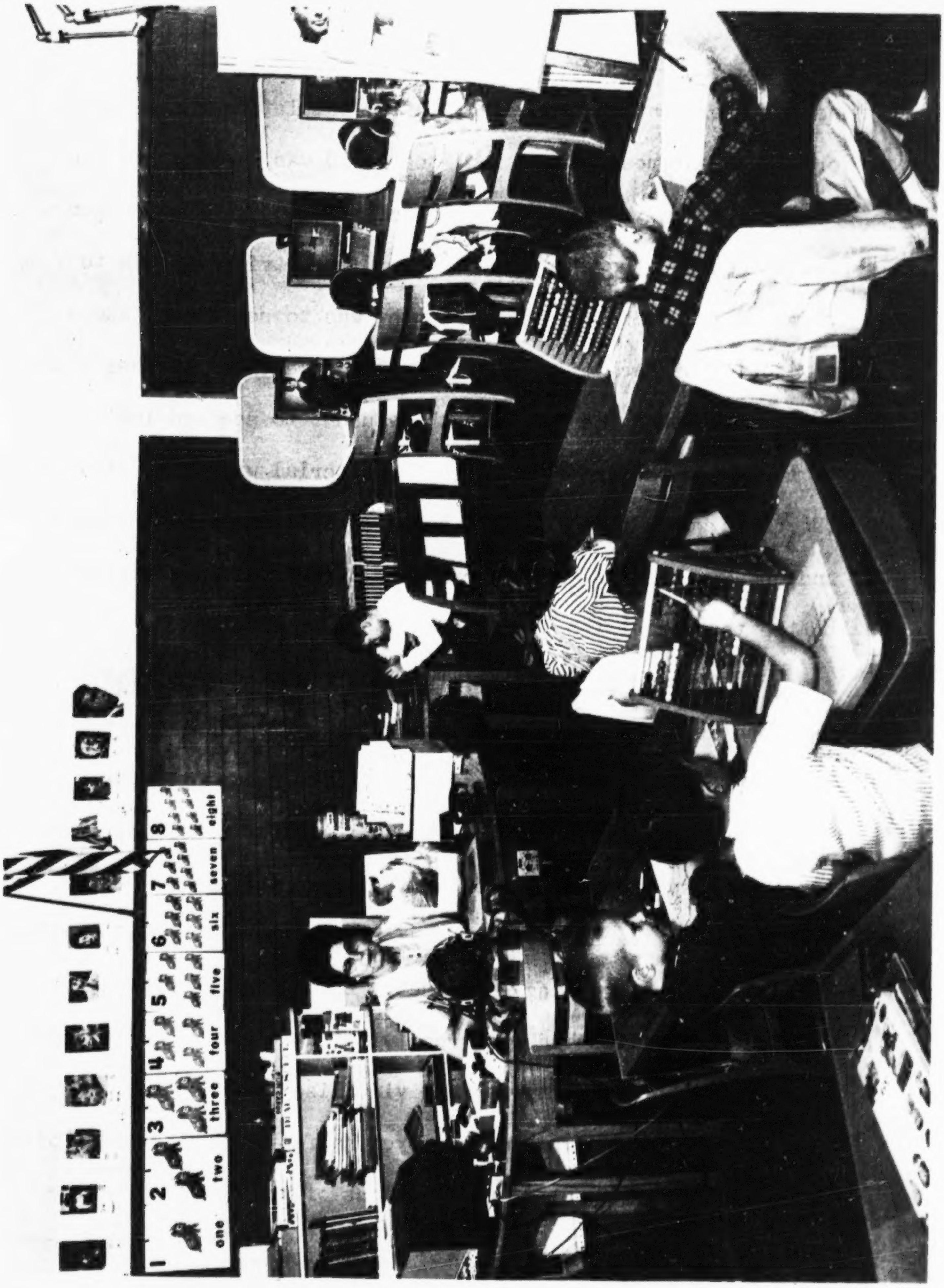
OBSERVATION FILM
SPLIT SCREEN TECHNIQUE

that the instructional films were produced in color, a black and white copy of certain titles was produced in a half-frame format. The two camera, double shooting technique insured identical versions, except that the film teacher was photographed in the left half of the frame for the observation film print. When the observation films were taken in the classroom laboratory, the student was photographed in the right half of the frame. These half-frame films were matched by synchronizing the sound tracks and printed as one film. The resultant print was not only a pictorial record of the progress of the project, but also was a means by which a delayed study could be made of the teacher's actions (stimulus) and the learner's reactions (response). Twenty-seven observation films were produced for this detailed study. An explanation of motion picture production techniques may be found in Appendix B. A description of each of the observation films may be found in Appendix D.

Utilization Procedure

The learning laboratory, described previously, was constructed to fit into the classroom floor plan and designed to function as an integral part of the daily instructional procedure. The laboratory served as an additional resource for the teacher to employ in her educational plan.

For the first film series, the teacher introduced the lipreading exercise to the student in a manner similar to her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WORK-STUDY STATIONS
LOWER ELEMENTARY CLASSROOM

normal presentation procedure. After completing the tutorial or group-centered instruction, the child was directed to the laboratory for the practice phase of his study. The teacher would instruct the child as to the film cartridge he was to view and the number of times that he was to see a continuous projection of each film. On other occasions, the teacher would select more than one film for the student to see and indicate to the child the order in which the material was to be studied. The child would take the film cartridges into the booth, load and operate his own projector, and return the film cartridges to the teacher at the conclusion of his observation.

The second film series, left and right concept was utilized as self-instructional material. The classroom teacher only instructed the child as to what films he was to see, how many times, and how often. She served as the director of the learning experience and not as the teacher. In the third film series, the classroom teacher followed the film instruction with various pupil-teacher lipreading exercises. Extending the variety of learning activities and resources within the room gave the teacher more opportunity for individualized instruction.

An evaluator, who was employed half-time during the project, periodically interpreted the reactions of the children to the various instructional and response films. A record of the number of viewings by each child of each film was maintained, but the child was not evaluated on each viewing. The total number of viewings and evaluations are reported in Section 2, Appendix A. Beside the subjective evaluations mentioned, at various points of progress a film was taken of each child responding to the instructional films. These observation films served as documentary evidence for the profile rating by the evaluator.

The operation of the laboratory was not organized as an independent experiment, but as a functional resource within the classroom. The utilization procedure was very similar to the use of auditory trainers and other specialized equipment.

Project Personnel

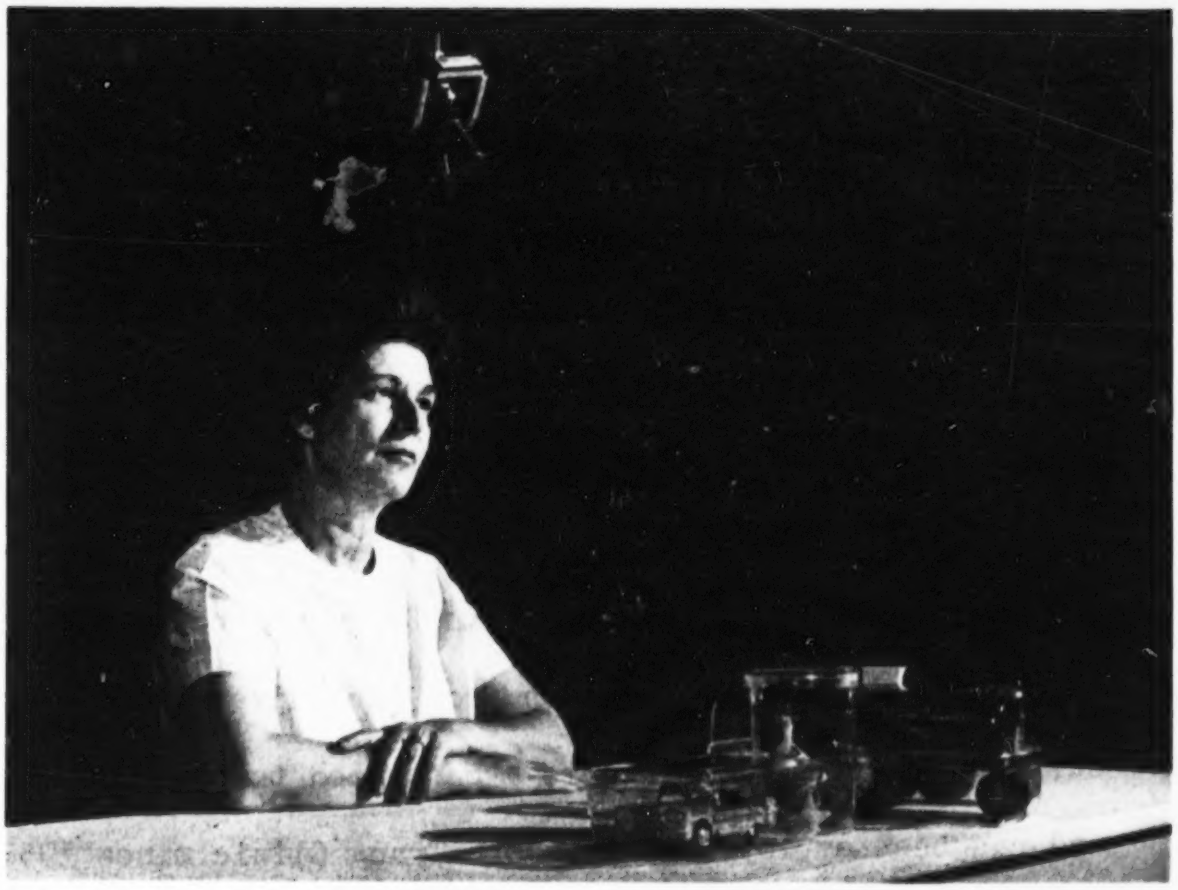
The project staff did not include any full time employees. Three members --- project director, project evaluator, and project secretary --- were released one-fourth, one-half, and one-half time respectively to work on the study. All production was contracted with University Photographic Productions, University of Nebraska, and although the production crew was not part of the operational project staff, their names are included in this section. Two experienced teachers of the deaf were employed as film teachers for the number of days required to complete each production. The five-member advisory committee served as consultants to the project.

Project Director: Dr. Robert E. Stepp is Head, Bureau of Audiovisual Instruction; Assistant Director, University Extension Division; and Associate Professor, Educational Administration at the University of Nebraska. He was released one-fourth time to conduct this feasibility study. He has had considerable teaching experience in the fields of music and audiovisual education. His audiovisual administrative experience includes both military and civilian assignments. His field of interest is the application of instructional technology to educational programs. As the parent of a deaf child, Doctor Stepp brings to this particular study considerable insight into the problems involved.

Project Evaluator: Mrs. Marie Focht has a master's degree in Educational Psychology. She is a special education teacher in the Lincoln Public Schools and was released half-time to work in the project. Her field of interest, prior to this study, was the education of the visually handicapped.

Project Secretary: Mrs. Jean Ullstrom, hired as secretary to the Director, worked half-time in the project and half-time for the University Extension Division. Mrs. Ullstrom is an experienced secretary who has had previous assignments in other institutions as a member of a research staff.

Film Teacher: Mrs. Ferne Ihfe is a faculty member of the Hard of Hearing Unit, Prescott School, Lincoln, Nebraska. She has a master's degree in Educational Psychology with emphasis in Special Education. Her teaching experience includes four years in a rural school, three years in a regular fourth grade classroom, four years working with the Educable Mentally Handicapped, and four years as a teacher of the deaf. She has



MRS. FERNE IHFE
FILM TEACHER

MRS. PATRICIA BOLLIGER
FILM TEACHER

taken graduate courses in the education of the deaf at the University of Nebraska, John Tracy Clinic, and the University of Minnesota. She is currently working toward her doctor's degree.

Film Teacher: Mrs. Patricia Bolliger is a staff member of the John Tracy Clinic, Los Angeles, California. She attended the University of San Diego and received a bachelor of science degree in education from the University of Southern California. Mrs. Bolliger is a certified teacher of the deaf and has been employed at the John Tracy Clinic since 1958.

Production Staff:

Film Producer: Mr. Kaz Tada, Manager, University Photographic Productions was film producer. He has had considerable experience in motion picture production and in photographic research, both as a photographer and as a director.

Motion Picture Director: Mr. Brockford Gordon, Supervisor, Motion Picture Production Section, directed and edited the films. Mr. Gordon has produced numerous films during his employment at the University of Georgia Center for Continuing Education and for commercial producers.

Sound Technician: Mr. John Werner, Motion Picture Cameraman, Motion Picture Production Section, served as recording technician, assistant film editor, and photographer. Mr. Werner has also worked on educational film research projects at the University of Nebraska and the University of Illinois.

Advisory Committee:

Dr. Marshall S. Hiskey, Professor of Educational Psychology and Measurements; Director, Educational Psychological Clinic, University of Nebraska. His field of interest is in working with the deaf and the mentally retarded child. Doctor Hiskey is known for his Nebraska Test of Learning Aptitude which is widely used as a measurement device for the acoustically handicapped.

Dr. George H. Kurtzrock, Associate Professor, Speech and Audiology, University of Nebraska. He was formerly Director, Speech and Hearing Department, Rehabilitation Institute, Detroit, Michigan, and has held similar positions at the University of Florida and the University of Illinois. Doctor Kurtzrock's field of interest is experimental phonetics, and the design of programming materials for the hard of hearing child.

Dr. Edgar L. Lowell, Administrator, John Tracy Clinic, Los Angeles, California; Professor, University of Southern California. Under Doctor Lowell's leadership the John Tracy Clinic has become world-renowned for educating the hard of hearing student and training teachers of acoustically handicapped children. He has conducted numerous experimental studies which have resulted in new methods for teaching the hard of hearing child. He is the author of several books, numerous articles, and of particular interest is his work as Principal Investigator and Editor of the John Tracy Clinic Research Papers on Lipreading.

Dr. Wesley C. Meierhenry, Assistant Dean, Teachers College; Professor, Educational Administration and of History and Principles of Education, University of Nebraska. He is a recognized authority in instructional media and in the application of instructional technology to teaching. He was Director of an extensive four-year research program, "The Nebraska Program of Educational Enrichment through the Use of Motion Pictures." The results of the experiment are widely quoted in the literature as the most comprehensive and significant experimental study in the audiovisual field in the post-war years. Doctor Meierhenry is the author of many books, articles, bulletins, and monographs.

Dr. John H. Wiley, Chief, Division of Communicative Disorders, Nebraska Psychiatric Institute and Associate Professor, Speech Pathology, Department of Neurology and Psychiatry, College of Medicine; Associate Professor, Departments of Speech and Educational Psychology, University of Nebraska. Doctor Wiley is a nationally known authority in the field of audiology. He is actively engaged in audiological research at the Nebraska Psychiatric Institute. Recently Doctor Wiley has been involved in the completion of a joint Neurology-Audiology Laboratory at the Beatrice, Nebraska State Home for Retarded Children, and with others he plans a series of studies on evaluation of speech, language, and hearing in an institutionalized mentally retarded population.

Local Committee:

To facilitate the establishment and operation of the learning laboratory in the Lincoln Public Schools a local committee was appointed by the Project Director. The members, who provided the liaison between the Lincoln Public Schools and the University of Nebraska, were:

Dr. R. L. Fredstrom, Assistant Superintendent in charge of Instruction, Lincoln Public Schools

Mr. Julius Humann, Director, Guidance-Special Education, Lincoln Public Schools

Mrs. Ferne Ihfe, Teacher, Prescott Hard of Hearing Unit, Lincoln Public Schools

Mrs. Marie Focht, Teacher, Lincoln Public Schools

Mr. Kaz Tada, Manager, University Photographic Productions, University of Nebraska

Design Summary

This feasibility study was designed to explore the extent to which acoustically handicapped children can accomplish a portion of their own lipreading instruction by means of an 8mm motion picture learning laboratory. Variations in content, format, duration, rate of exposure, and response patterns were intentionally programmed into the study in order to find guidelines for the development of related instructional systems.

CHAPTER III
REPORT OF FEASIBILITY

CHAPTER III

REPORT OF FEASIBILITY

The general concept of this study, as outlined in the preceding chapter, was the establishment of an instructional environment which would facilitate lipreading instruction by the use of carefully designed teaching films. Fairchild Mark IV self-contained 8mm motion picture projectors, utilizing 8mm sound color film in cartridges, was the basic instrument in each booth. The educational plan required the student to take the assigned instructional film to a designated booth for viewing in a projector under his own operational control. Such an independent instructional situation poses many questions. This report of feasibility is designed to answer these questions in terms of the evidence compiled and reported in Appendix A.

CAN LOWER ELEMENTARY ACOUSTICALLY HANDICAPPED CHILDREN BE EXPECTED TO ASSUME SOME DEGREE OF RESPONSIBILITY FOR THEIR OWN INSTRUCTION IN A SELF-OPERATIONAL LEARNING LABORATORY ENVIRONMENT?

Every indication from the observation of the children in this study, regardless of age or extent of hearing loss, would support a position that these children can perform successfully certain independent learning functions. The conduct of the children in the classroom, their repeated expression of satisfaction from their experience in the laboratory, and their educational growth, give further proof to this supposition.

IS IT FEASIBLE FOR LOWER ELEMENTARY CHILDREN TO OPERATE THEIR OWN SELF-CONTAINED 8MM MOTION PICTURE PROJECTOR?

An 8mm sound, color, lipreading film was produced demonstrating to the children how to operate the projector. Immediately after one viewing of the film, each child was given the opportunity to try it for himself. In no case did the child fail to follow the procedure explained. After this sequence of instruction, the child operated his own equipment for the duration of the project.

WHAT IS A SELF-CONTAINED PROJECTOR?

This term refers to a projector which has the film-projection mechanism and the screen in the same case or cabinet. This technical arrangement is often referred to as "rear screen projection," since the image appears on the back side of the translucent screen. The projector unit has an outward appearance similar to a television set.

DID THEY HAVE ANY DIFFICULTY IN STARTING AND STOPPING THE EQUIPMENT?

The projector is easily started by depressing one lever. Since the machine is transistorized no warm-up period is needed. This provision offers instantaneous sight and sound. The depression of a separate button stops the projector. Both controls are conveniently located on the lower left front of the projector. The children had no difficulty in starting and stopping the projector.

WERE THE CHILDREN ABLE TO CONTROL THE ADJUSTMENT OF VOLUME, FOCUS, AND FRAMING?

The children who had residual hearing soon discovered that a slight adjustment of the volume control would give additional sound support. The hard of hearing children became accustomed to adjusting the volume as the second step that followed the starting of the projector. The profoundly deaf children, after several attempts at adjusting the volume, gave up the procedure and didn't bother thereafter to manipulate the control. Focusing the picture and framing the picture were more difficult skills to teach. These two operations were not included in the projector instructional film but were taught at the appropriate time by the classroom teacher. Although the sharpness of focus has a direct relationship to visibility, this is not the problem that it might appear to be. The loading of the film by cartridge and the standards maintained in film production reduced the focal deviations found in the traditional means of projection. Framing is another adjustment that was seldom used. What adjustment in framing was required was handled by the classroom teacher.

WAS THERE ANY PROBLEM IN HANDLING THE FILM CARTRIDGE AND INSERTING IT INTO THE PROJECTOR?

The loading and unloading of the film cartridge was clearly demonstrated in the instructional film. The children had no difficulty in performing this task. Occasionally a cartridge would bind if it was not inserted straight into the projector. The children soon learned that a slight pull and a second push would correct this problem.

WERE STUDENTS ABLE TO PUT ON THEIR OWN HEADSETS?

Headsets with rubber-cushioned phones and small boom microphones were provided at each projector. One cerebral palsied child had some difficulty in slipping the earphones on his head and keeping them there during the viewing session. The other children experienced no difficulty in placing the headsets properly on their heads.

DID THE STUDENTS WITH RESIDUAL HEARING TAKE ADVANTAGE OF THE AVAILABLE SOUND TRACK?

As mentioned previously, the children with some hearing did make adjustments in the sound level. In watching these children, it became obvious that some were gaining cues from the sound track and that they soon learned from the auditory cues when to increase their visual attentiveness. The students were permitted to utilize the sound support when viewing all instructional films. The intent of these viewings was to simulate normal speech situations as much as possible. All filmed lipreading tests in the project were given without the aid of sound, however.

WHAT MAINTENANCE TROUBLES WERE INCURRED?

Maintenance problems on the Fairchild systems fell generally into two classes, those involving the projector mechanism and those involving the film and cartridge.

In the first case, the variable speed drive mechanism exhibited what was evidently a design flaw, corrected by a field modification using accessories furnished by the factory. Except for lamp replacement, most other problems were minor in nature.

In the second area, the film as received from the processor was found to exhibit excessive friction as it rubbed against itself in the cartridge loop. Treatment of the film with a special lubricant as suggested by the manufacturer, alleviated most of the problem. All films were treated with Vacuumate's "No-En" coating process.

ACCORDING TO THIS STUDY, WHAT IS THE EARLIEST AGE AT WHICH IT WOULD BE FEASIBLE FOR LOWER ELEMENTARY CHILDREN TO OPERATE SUCH EQUIPMENT?

From the observation of children in this study and a similar, but younger, group at the Omaha Hearing School, Omaha, Nebraska, the earliest age recommended would be four years. The children in the experimental population, beginning at age five, had no difficulty in operating the equipment. At the Omaha Hearing School, children as young as three and one-half years of age had no difficulty in operating the projector after one viewing of the instructional film. It was noted by the Principal of the Omaha school and the Project Director that successful operation of the projector by the very young was not the sole criterion for the utilization of the device in a learning program. Further evidence is needed, but there was a noticeable difference between the four year old and the child a year younger in viewing attitude and receptiveness regarding learning from films.

IS THE USE OF A SELF-OPERATIONAL FILM PROGRAM EFFECTIVE FOR THE IMPROVEMENT OF LIPREADING ABILITY?

Three filmed series were produced to test the feasibility of a self-operational learning laboratory for teaching lipreading to lower elementary acoustically handicapped children. Data supporting the following discussion may be found in Appendix A.

Single-Word-Emphasis Approach: The initial series dealt with the lipreading of a four-word vocabulary and the directions for identifying the four objects which the words represented. Although the four words were relatively simple, "car-ball-doll-tractor," the test for feasibility was to determine not only if the child could distinguish between the four words spoken on film, but whether or not he could follow directions in the placement of the objects in the booth and would respond to the film teacher by pointing to the proper object. Once the objects were in place, the film test became a lipreading drill over the four items. At the close of the exercise, the film teacher instructed the child to return the objects in a prescribed sequence to a shelf in the booth. In the end-of-unit test, the film teacher manipulated the same identical objects in the film that the child was asked to handle in the booth. Also in the plan of this film, the teacher, after waiting a brief period for the child to respond, would confirm the proper response by pointing to the object in front of her. This film was a form of visual programming to test and instruct at the same time. The average proportion of correct responses for this end-of-unit test was 95%. It probably should be restated at this point that the children were not allowed to wear the headsets or receive any form of sound reinforcement during the test phase of the project.

One month later, a second test over the same four items was given. This time the film teacher did not manipulate the objects in the film and the student had to lipread all of the directions as to placement of the objects and the identification of the items. The average response from this test situation was 80% correct. One child, Case Study IX, has extreme difficulty in decoding any form of lipreading. Excluding this case, the average was 89% correct. The same film test was administered four months later. Again the group average was 80% correct and without Case Study IX the results showed a slight drop to 88% correct. The final test in this series was given six months after the completion of the unit and one month after the test just discussed. Although this film test was over the same four-word vocabulary, the film teacher was a stranger to the students. No visual or auditory cues were provided. The children were required to lipread the placement and identification of the objects. In this test six of the nine respondents had perfect scores. The average was 88% correct and, excluding Case Study IX, 94%.

Associated-Word Approach: The second series of films dealt with the concept of left and right. The instructional idea was to design a series of four teaching films and two testing films which would promote an understanding of the left and right relationship while teaching the child to lipread the associated vocabulary. All four of the instructional films required intermittent overt responses from the viewer. A description of these films may be found in Appendix A. The four films had 8, 10, 6, and 12 responses per film and the average proportion of correct responses respectively were 74%, 74%, 75%, and 76%. The end-of-unit test required the child to respond to the film teacher by indicating the proper answer on a light box. Two push buttons controlled the lighting of the words "left" and "right." If the child could lipread such questions as "Which one is this?" (left or right mitten, for example) or "Which way did it go?", he would indicate the proper response by pushing the button lighting the correct word. A student actor in the film confirmed the answer by depressing a similar button and lighting the correct response. This film was 10 minutes in length and contained 31 response requests. The average percentage of correct responses was 88%. In a post-test, using the same film four months later, the group averaged 86% correct.

Prior to the presentation of this film series only two children were able to indicate any understanding of the left-right relationship. At the conclusion of the study all children were able quickly to identify left and right relationships to their body; objects such as mittens, shoes, proper table setting of knife, fork, spoon; and directions of movement.

Multiple-Word Approach: The third series of films dealt with the development of lipreading vocabulary for a unit study. The Unit was on Foods, and a film was produced for each of the three basic meals, breakfast, lunch, and dinner. These films introduced the lipreading words at a much faster rate and in larger groupings than in the previous series. The instructional scene was a table setting, at which the film teacher proceeded to serve the viewer's meal. In the process of serving breakfast 10 words for foods were introduced, for lunch 10 words were used, and for dinner 11 words were presented. A composite list of 27 words for food items became the working vocabulary for this series. The three presentation films (breakfast, lunch and dinner) and the review film (cafeteria style) required no responses other than direct observation. The lipreading test film for this series was a multiple-choice pictorial examination. A booklet was designed which had four full-color pictures of food items per page and contained twenty-one pages. On instructions from the film teacher, the child was to open his booklet; lipread the food word; draw a circle around his response; and turn to the next page. Fourteen of the test pages had single food items in each of the four picture frames from which the child made his choice. The last seven pages had two food items in each of the four picture frames which made the lipreading more difficult. A self-administered film test, using the foods booklet, was given the children prior to the use of the teaching films. In this pre-test the children's average group response was 64% correct for the single words and 50% for the paired words for an overall average of 60%. The same film test was given at the end of the filmed unit, with the results being 74% correct for single words, 57% for paired words, and a group average of 68%. Two weeks later another version of the film test, given by a different film teacher from the one who taught the unit, was administered. In this post-test, the children responded 69% right on the single words, 50% on the paired words, for an average of 63%. The apparent low scores on this series as compared with the other two film series, may have resulted from the increased complexity of the films, the mode of presentation, the introduction of an extensive vocabulary, and the mechanical fact that the film teacher did not wait for a slow response, but proceeded at a constant rate. It is interesting to consider these results in comparison to an informal test, without films, but using the foods booklet, given by the classroom teacher before the start of this phase of the study. Only one child was able to lipread all the words correctly. Five other children could lipread 85% or better. The group average was 77%. In a similar test conducted by the classroom teacher at the conclusion of the study, five children were able to lipread 100% of the words, three children achieved 85% or better, and the group average was 86%. The resultant gain gives evidence that the students' lipreading ability of these words did improve.

IS THE LABORATORY ARRANGED AND THE FILMED MATERIAL DESIGNED TO BE UTILIZED FOR THE PURPOSE OF SELF-INSTRUCTION?

The learning laboratory was planned to be self-operational and not self-instructional. The term "self-instruction" implies that the learner administers his own course of study and that the learning program directs the student through the learning sequences. This study investigated the feasibility of the acoustically handicapped child's using the learning laboratory for independent study of lipreading exercises assigned by the teacher. The films were designed as an extension of the teacher and not as a replacement for the teacher. The devices employed in this laboratory do have the capability of being utilized for self-instructional sequence if it were desired. In this particular study, the four-word vocabulary in the first film series had been previously taught by the classroom teacher and therefore, the test of feasibility was the application of the learning laboratory for reinforcement and practice in lipreading instructions (what to do -- when to do it). However in the second film series, the concept of left and right had not been presented previously by the classroom teacher and was not taught by her during the period of this study. In a sense, this series of films was utilized as a self-instructional sequence. For the foods series classroom teaching followed the viewing of the films. This instruction consisted mainly of a tutorial lipreading exercise which consisted of identifying food items in magazine pictures. In order to test adequately the feasibility of such an instructional procedure, the filmed materials carried the major teaching responsibility for this series also.

HOW DID THE CLASSROOM TEACHER UTILIZE THIS LEARNING LABORATORY?

The laboratory was considered as another student work station in the classroom. While one student was being tutored by the teacher and other children were doing seat work, one to three children would study their lipreading lesson in the booths. The period of use and frequency of use varied with the subject being studied and the activities of the day.

HOW MUCH TEACHER TIME WAS CONSUMED IN PREPARING THE LABORATORY FOR THE USE OF STUDENTS?

The "housekeeping" duties of the classroom teacher were held to a minimum. A master switch energized all projectors and the amplified sound system. All film cartridges were numbered and kept in a central location. These were continuous loop film cartridges -- which means that the beginning of the film and the end of the film were spliced together, giving continuous projection without the necessity to rewind the film. On the occasions when the test films were administered it was necessary for the classroom teacher to place in the booth the objects which the student was to manipulate. No daily preparation of the laboratory was necessary. Since the projector was self-contained and the films were in cartridges, all operational duties were performed by the students.

HOW ATTENTIVE ARE STUDENTS TO THIS TYPE OF TEACHING?

The project evaluator made over 977 observations of the students viewing the various films. Twelve of the twenty-five films in this project were produced in a manner that required no direct participation other than direct visual study by the students. For these films the degree of interest held at a high level for the entire group. On the five-point evaluation scale used in this study, a decisive majority of the observed ratings were either at the "intent interest" or "prolonged interest" levels. The composite graphs may be studied in the Evaluation Section. The thirteen other films in the project required some form of overt response from the student while he was viewing the films. This involvement further increased his attentiveness.

WAS THIS HIGH DEGREE OF ATTENTIVENESS MAINTAINED IN REPEATED SHOWINGS OF THE SAME FILM?

Only slight variations in attentiveness were noticed when the repeated showings were spaced at least a day apart.

A drop in attentiveness was noticed if the same film was repeated immediately a second time. A considerable drop in attentiveness was evident if the child was required to watch the film a third time at the same sitting.

HOW DID THE STUDENT KNOW WHAT FILM TO OBSERVE AND FOR HOW LONG?

The classroom teacher would tell the student the number of the film or films that he was to see and how many times to view each. The child, as indicated previously, then proceeded to show his own films.

HOW LONG WILL A CHILD WATCH A FILMED LIPREADING LESSON?

The films in this project varied from 2½ minutes to 12 minutes in length. The content of the film and the involvement of the viewer were factors which exercised considerable influence over the viewing habits of the students. If the subject being taught was interesting (and interestingly presented) or the child had to perform during the viewing, the attention span was the duration of the film. If the instructional pace slackened or the content became uninteresting, the attention span broke several times during the viewing. From observations of these children, it is suggested that the viewing time of a lipreading instructional film be the shortest period in which the content can be adequately and interestingly taught.

WHAT TYPES OF TEACHING FILMS WERE EMPLOYED IN THIS STUDY?

This project experimented with three types of teaching films --- presentation, review, and response. The first type was a straightforward presentation of the lipreading lesson. The review films were restructured to teach the same lesson, but with different materials and/or in a different sequence. The third type required the learner to participate actively in the lesson. These types were utilized differently in each of the three filmed series.

In the first series, single-word-emphasis approach, a sequential, accumulative, and cyclic plan of instruction was used. The first lipreading word being emphasized was taught by a presentation film. The second word was presented in a film lesson. These two words were then studied in a review film. A response film was produced to check the student's ability to lipread these two words. The cycle begins again with the introduction of the third word in a presentation film and its inclusion in a review film and a response film. The fourth word is added to the cycle and the instructional plan develops.

In the second series, associated-word approach, aspects of the presentation, review, and response films were incorporated in each of the films in this series. Each film taught the prescribed lesson, reviewed it, and requested intermittent responses. This combined approach involved the learner in a plan of active participation. Further participation was required in the response test films.

The third film series, multiple-word approach, had three presentation films (breakfast, lunch, and dinner foods), one review film, and two response test films. The review film covered the lipreading lessons in the three presentation films. The only active participation in this series occurred in the response test films. No visual confirmation was given the learner as to the correctness of his responses.

WHAT TYPE OF FILM IS MOST EFFECTIVE?

From the observations of the Evaluator and the Project Director and from the data collected, the combined approach of including elements of presentation, review, and response in each film was the most effective. The more involved the learner became the greater the attention span and the higher interest level.

WHAT TYPES OF RESPONSES WERE ELICITED?

Each filmed series employed a different response technique as a part of the feasibility study. In the first series, the learner was required to manipulate objects in the booth. The film teacher gave him directions about the placement of the objects and then conducted a drill in which she asked the child to point to the items in response to her questions.

In the second series the instructional films elicited verbal and manual responses. Frequently in these films the film teacher asked the learner to say "left" or "right." Also she asked the viewer to hold up his left or right hand. This involvement kept the child alert to the lesson being taught. One test film in this series had the student respond by pushing buttons which lighted up the words "left" or "right." The film teacher would pose a question and then ask the learner to push the button to indicate his response. Another response film required the student to turn on the projector after it was turned off automatically in the filmed lesson. The film teacher explained that she would turn off the projector and instructed the learner to turn it on. The teacher visually turns off the projector and the machine automatically stops. If the child can lipread the instructions, he will turn on the projector and the lesson will continue.

The only response films in the foods series were test films. A pictorial foods booklet patterned as a multiple-choice test was placed in the booth. The film teacher instructed the child to draw around the picture of a specific food item. The learner selected the item from four colored photographs on the page and drew around his choice. The film teacher told him to turn to page two and the test continued.

The response patterns elicited from the films in this study could be described as: (1) speaking aloud, (2) pointing with the hands, (3) manipulating objects, (4) pushing buttons, and (5) marking test items.

WHAT TYPE OF RESPONSE IS MOST EFFECTIVE?

No attempt was made to evaluate the different types of responses. The children participated actively in all types performed in this study. It is the opinion of this observer that the response should be as purposeful and meaningful as possible in relation to the content being studied. The children appeared to respond eagerly when the response was a logical outgrowth of the learning sequence, and to lose enthusiasm if the response was a repetitious drill without evident purpose. Learning response patterns is an area in the education of the acoustically handicapped which needs extensive study.

WHAT TYPES OF VISUAL CONFIRMATION WERE EMPLOYED IN THE RESPONSE TEACHING FILMS?

In the single-word-emphasis approach the film teacher instructed the learner to place the realia (upon which the film quiz was based) in front of him. She then asked the viewer, "Show me the __________(object)." If the child could lipread the directions and identify the proper object, he would point to it. After a slight pause in the film, the film teacher would also point to the correct object. The presence of the same identical items in the film that were in front of the learner enabled visual confirmation by the teacher's pointing to the correct object. The child pointing to the object in the booth and the teacher pointing to the object in the film gives a one-to-one comparison.

The second series employed two techniques. In order to orient the teaching of the left and right concept in relation to the viewer, the hands of a student actor were visible at the bottom of the film scene. The intent of showing the pair of hands was to position the learner and to include him in the instructional scene. These hands also served as a form of visual confirmation. When the film teacher would ask the viewer, "Show me your left (or right) hand," the student actor would execute a delayed response which served as the confirmation.

The other technique was a push button response. A light box was built to signal the words "left" and "right." The lighted responses were controlled by two push buttons mounted on the front of the box. In the response film in which this was employed, the film teacher would ask, "Which one is this?" or "Which way did it go? Push the button." If the child could follow the lipreading exercise he would push the proper button to light up the correct response. After a delay, a hand of the student actor in the film, would push a similar button and light the correct response within the film. Again the learner could make a visual comparison with his own answer.

No form of confirmation was used in the third series of films.

WHICH TYPE OF VISUAL CONFIRMATION WAS MOST EFFECTIVE?

No attempt was made to evaluate the differences in the types of visual confirmations. Many types of visual reinforcement are possible and probably would vary with the content taught and the behavior desired.

IS A FORM OF VISUAL CONFIRMATION NECESSARY?

In the opinion of the Evaluator and the Project Director, it is highly desirable to design into instructional response films a form of visual confirmation which informs the learner whether or not his response was correct. In this study the third film series on teaching the vocabulary for a foods unit had no plan for confirming the responses. The children received their lowest test scores from this series. Since other factors (number of words per film and rate of presentation) may have accounted for this drop, the significance of the absence of visual confirmation cannot be fully ascertained. It can be said, however, that if a media system is to be self-operational and require a minimum of supervision from the teacher, some form of confirmation is necessary to prevent the reinforcement of wrong habits or misinformation.

IF THE CHILD IS STUDYING THE FILM INDEPENDENTLY, HOW DOES THE TEACHER KNOW IF HE IS RESPONDING CORRECTLY OR EVEN RESPONDING AT ALL?

The teacher doesn't know and doesn't need to know unless she wishes to check the student's progress. Remember that these films were designed as practice lipreading films and were not intended to be the sole vehicle for teaching lipreading. In a typical classroom situation the teacher would introduce the lesson, frequently review the exercise, and guide the child to the expected performance level. However, if a response film is designed properly there is no reason for the teacher to spend her time as a monitor. Response teaching films (response testing films are another matter) should be produced following the principles of programmed instruction. In visual programming the confirmation or verification of the correct response is built into the film in a manner similar to the reinforcement given in verbal programming. In the case of visual programming, the teacher can give the confirmation by performance or showing the real object rather than signalling the correctness of the response with printed words. If the film proceeds in a logical order so that the child knows how to respond, when to respond, and the correct response, he will participate. He also receives satisfaction from checking his response with the proper response indicated in the film. Since this is a teaching film and learning is the resultant goal, participation is not the sole evaluative measurement if by observing the teaching response sequence the student also reaches the learning objective.

IS IT POSSIBLE TO ESTABLISH RAPPORT BETWEEN THE FILM TEACHER AND THE STUDENT VIEWER?

Any number of incidents can be related which indicate-that the student accepted the film instruction in a very personal way. In one instance, the child stood up to look in the box that the film teacher was opening. Another child held his hand to the screen in a gesture to touch the face of the film teacher in order to pick up the vibration of the spoken word. In a food sequence, the film teacher asked the viewer if he wanted some pepper on his potatoes. The film teacher then proceeded to shake pepper on the potatoes. During this sequence the child kept making faces, indicating clearly that he did not want any pepper at all. The same child was asked by the film teacher if he wanted any bread and he held up his hand in a position of restraint and said, "no." Many children talked back to the film teacher and repeated what she said. Isolation in the booth, the production of the film from the learner's viewpoint, the apparent closeness of the face-to-face relationship between film teacher and student, gave an intimacy of instruction which provided realism to the experience.

DO STUDENTS RESPOND TO INSTRUCTION FROM THE FILM TEACHER IN A MANNER SIMILAR TO THE RESPONSES EXPECTED IF THE CHILD WERE IN AN ACTUAL CLASSROOM TEACHING SITUATION?

The children had very little difficulty responding to common carrier phrases and typical beginning lipreading questions. Such word groups as the following were used: "Hold up your hand." "Put it down." "Show me your right hand." "Put the car here." "Put them away." "Where is the doll?" "Turn it on." "Turn it off." "Push it in." "Pull it out." "Draw around __________."

"Which way did it go?" The child's responses to this type of question or directive were almost identical to his reactions in a classroom teaching situation.

DOES THE AUTOSTOP FEATURE OF THE PROJECTOR OFFER ANY INSTRUCTIONAL ADVANTAGES?

The film may be coded to stop the projector automatically. This is accomplished by notching the edge of the film at the appropriate point. This interruption of the film allows the learner time to write, draw, construct, place, or perform before proceeding with his filmed instruction. This break in the learning sequence gives the student more time to formulate his response. It also provides a logical spot for the confirmation of the response at the beginning of the next filmed sequence. Only one film in this study used this technique and then as a means of testing the "left" and "right" concept and the lipreading of "on" and "off." Further study is needed to explore the potential of such an instructional procedure.

WHAT OTHER APPLICATIONS OF THIS MEDIA SYSTEM ARE SUGGESTED BY THIS STUDY?

The applications are limitless. Self-operational learning laboratories employing single concept cartridge-load films have a potential use for all students at all ages and levels of instruction. The availability of such facilities would permit the independent study of visual and auditory materials in a manner similar to presently assigned readings. This laboratory approach has application not only in the classroom but also in the library and in the home.

For the acoustically handicapped, such a laboratory might accelerate the early development of a speechreading vocabulary. The opportunity to witness the speaking habits of many different people and to study exercises presented by different teachers might broaden the scope of lipreading instruction. Interjecting such variety and differences might lead to improvement of the learner's skill. The process, of course, would work equally well for fingerspelling exercises.

The film medium itself offers a realistic vehicle for teaching subject matter. Single-concept films for teaching course content are being developed commercially for the normal child. Many of these films, since they are silent and have captions, will be suitable for teaching the deaf. One advantage in producing subject matter films for the deaf is the fact that a visible narrator (either lipreading or fingerspelling) can be located within the scene to explain the event.

Another application of the learning laboratory approach would be the teaching of lipreading to adults. As senior citizens lose their hearing acuity or when adults lose their hearing by an injury, they seek some method of training and study. Lipreading films in cartridges would be one convenient solution for this problem.

The reactions of two children in this study who have cerebral palsy suggest the application of this laboratory approach with children who have similar afflictions. The simplicity of operation of the projector and the convenience of the film in cartridges enable them to participate without difficulty. The isolation in the booth and absorption with the visual image produced a therapeutic effect which made them more placid and receptive to instruction. This observation and the repetition of film content to provide lipreading practice further suggest the possibility of using such a system and materials for teaching the mentally retarded.

In schools for the handicapped the location of the learning laboratory in the residential hall for evening study may have as great an application as using the facility in the classroom. Out-of-school assignments of speechreading practice which correlate with the day's lesson may expedite the entire instructional program. Such a plan offers a continuity of instruction which heretofore has not been possible.

IS IT FEASIBLE TO ESTABLISH AND OPERATE A LEARNING LABORATORY FOR THE HEARING IMPAIRED?

The evidence compiled and reported in this study supports the position that it is feasible to establish a self-operational learning laboratory for the acoustically handicapped. Although this finding is based on the use of 8mm sound color films (in cartridges) which were designed to improve speechreading skill, the response of the students to this method of teaching suggests the possibility of similar approaches with other subject areas and related media.

CHAPTER IV
SUMMARY AND RECOMMENDATIONS

CHAPTER IV

Summary and Recommendations

Purpose

Basically, this was a project to determine if one of the new media (8mm sound films in cartridges) can provide independent study opportunities for the acoustically handicapped child to practice lipreading skills. In a sense, this was a search for a system which would allow increased observation of lip movements without limiting the child to only those situations which are face to face. This was not an attempt to teach lipreading without the assistance of a classroom teacher, but was a plan which established a labbratory for the student to practice the lipreading lesson assigned by the teacher.

The learning laboratory was installed in the lower elementary classroom, Hard of Hearing Unit, Prescott School, Lincoln, Nebraska. The laboratory consisted of three student study carrels with a Fairchild Mark IV 8mm cartridge load sound motion picture projector in each of these booths. A special observation room was constructed adjacent to these booths and provided a vantage point for the undetected observation of the students through one-way mirrors.

Filmed material, which was a continuation of regular classroom teaching and which utilized accepted techniques for teaching lipreading to the acoustically handicapped, was not available at the beginning of this study. As a part of the overall project, twenty-five instructional films were planned and produced. These films were designed to test the feasibility of such a laboratory system by requiring selected response patterns from the students. Three approaches to lipreading vocabulary were emphasized. One set of films stressed single words; one set stressed a group of related words simultaneously; one set stressed a concept with its associated words. Each set included these instructional elements:

(1) presentation (requiring observation of lip movements),
(2) review (requiring observation of regrouped materials),
(3) response (requiring overt action verifying lipreading comprehension).

As the series progressed, the responses elicited became more sophisticated. In the first set, the child responds directly to instruction by touching objects placed in the booth with him. In the second set, the response is indirect as the child pushes a button to indicate his choice. In the third set, the child is led by the film through a pictorial paper and pencil test of multiple choice form.

The evaluation phase of the project had its own audio-visual aspect. One of the evaluative techniques was the plotting of the child's reactions to the films on a time grid according to an assigned rating scale. These observation ratings were performed by an evaluator who visited the project daily and kept a case history of each student's progress.

An accumulative graph was prepared for each student on a per film basis and visually indicated his programs. A similar technique was used to show the composite effect resulting from the viewing pattern of all subjects. Nearly one thousand observations were recorded by the evaluator who was a staff member of the Special Education Division, Lincoln Public Schools, and who was very skilled in analysis interpretation and reporting of students' behavior. The experimental group was composed of ten acoustically handicapped children of ages ranging from five to nine years, and with hearing losses classified as hard of hearing, severely deaf, and profoundly deaf.

Another evaluation technique was the periodic filming of the child's reactions to viewing the instructional films. The resulting 16mm black and white film was a split-frame production in which the film teacher was in one-half of the motion picture frame and the child was in the other half. This gave an excellent opportunity to study the stimulus (teacher) and the response (child).

Conclusions

The evidence compiled from this feasibility study supports the position that acoustically handicapped elementary school children can assume some degree of responsibility for their own instruction in a self-operational learning laboratory environment. The conduct of the children in the classroom, their repeated expression of satisfaction from their experiences in the laboratory, and their educational growth gave further proof to this supposition. The laboratory setting proved to be an ideal facility for the independent study and practice of lipreading by the students.

The film organizational structure of presentation-review-response was a logical instructional pattern that was effective in teaching word vocabularies and developing concepts.

Films which incorporate these features in one filmed lesson were superior to those films which contained these elements in separate films.

The filmed unit which was utilized as basic instruction for teaching a concept was superior to the two filmed units which were supplemental (introduction and follow-up) and only developed vocabularies.

Active participation in the learning exercise, in the form of overt responses by the student, was found to be invaluable in the progress of the child. The responses of the children to the film teacher were similar and in some cases identical with the typical responses given to the regular classroom teacher.

Visual programming techniques of sequence and conformation gave reinforcement to the learning experience.

Visual confirmation of the correctness of the child's response was found to be an essential element in film production design.

The visual programming techniques employed in these films proved to elicit from the students meaningful overt responses which facilitated the development of the lipreading vocabulary.

The attention span of the children to the filmed lessons varied with the length of the films (4-12 minutes), but showed little evidence of distraction when the content was presented in a manner to involve the viewer (learner). The average interest level was identified as "prolonged viewing" which was a four point rating on a five-point scale. Only occasional drops in interest were noticed when the film showings were spaced a day apart. Loss in interest was evident when the same film was repeated two or more times at one study session.

The laboratory arrangement and the selection of a cartridge load projector provided a simplicity of operation which required very little supervision by the classroom teacher. The self-operational aspects of the instructional system allowed the teacher more time for tutorial and other teaching functions.

The children in this project had no difficulty in loading and operating the Fairchild Mark IV 8mm sound motion picture projector. Operational tests with younger children indicate that four years is probably the earliest age at which the child can be expected to operate his own equipment.

This feasibility study proved repeatedly that it is possible to establish rapport between a film teacher and an acoustically handicapped student similar to the relationship that exists in a face-to-face tutorial teaching situation. The project further verifies the feasibility of using a learning laboratory approach with elementary children and practicality of employing 8mm sound films for the improvement of the lipreading ability of the hearing impaired. Isolation in the booth, the production of the instructional films from the learner's viewpoint, the apparent closeness of the face-to-face relationship between film teacher and student, gave an intimacy of instruction which provided realism to the experience.

Evaluation - Advisory Committee

As a form of final evaluation, each member of the Advisory Committee was asked to prepare a statement summarizing his reactions to the project. The Committee met on three occasions, (1) at the beginning of the project, Planning Stage I; (2) in the middle of the project period, the Mid-Term Evaluation and Planning Stage II; and (3) at the close of the project, Final Evaluation. At these meetings the Committee members had opportunities to study the overall objectives of the project, preview the teaching materials, visit the learning laboratory, and observe the students utilizing the instructional system. Each member made his judgments from his own personal visitation and observations. In order to provide points of reference for these evaluative comments, five basic questions were asked of each member:

1. Do you consider this type of laboratory arrangement to be feasible for teaching the acoustically handicapped?

2. What operational feature(s) of the equipment do you believe to be most important?

3. What instructional situation do you think is most suitable for presentation by this medium (8mm film)?

4. What precautionary advice would you give to educators planning similar instructional media programs?

5. Do you believe that this media system has application for teaching other children?

Members were invited to give any additional comments on the use of 8mm films in the teaching-learning process. Their statements follow.

Marshall S. Hiskey, Ph.D.
Professor of Educational Psychology and Measurements, and Director of the Educational Psychological Clinic,
University of Nebraska

> I consider this type of laboratory approach to be well adapted to the teaching of acoustically handicapped children. In a classroom where individualized instruction is so important, this approach permits children to work on areas which need repetition and practice. It also frees the teacher to work with individuals or smaller groups without neglecting one or more children. In the typical classroom one would not need the more elaborate physical arrangement utilized in this project since recording or photographing of reactions would not be a regular part of the program.
>
> The simplicity of the equipment which permits the child to operate it completely and thus be independent of the teacher is most important. Of course, of greatest importance is the quality and effectiveness of the films.

However, the overall value of the program would be minimized considerably if the teacher had to supervise the operation of the equipment.

This medium is most suitable in situations that can be demonstrated physically or concretely. As indicated previously, it presents a near ideal supplement to the teacher where skills or concepts are acquired only after much "drill." It would have little value in the "one shot" type of presentation other than the fact that the child could proceed on an independent basis.

Educators planning similar instructional media programs must realize that the availability and quality of films are basic to the success of the program. Likewise, not all children are equally adaptable and responsive, physically or emotionally, to this type of instruction. The extent to which the technique is utilized with each individual should be determined by careful observation and analysis of each child's behavior. It probably would be a mistake to schedule each child for so many minutes per day at a fixed time.

As an individual who is interested in all types of exceptional children, I see many possibilities of these materials with other handicapped individuals, especially the mentally retarded. The films pertaining to food, table setting, left and right, and so forth, could be used with profit with the educable mentally retarded and perhaps even with trainable mentally retarded. I hope that I will have the opportunity to explore these possibilities with mentally retarded children in collaboration with Dr. Stepp.

The films which have been developed are unusually good and the reactions of the students are remarkable. It is a real thrill to watch these young hard of hearing children operate the equipment and respond to the materials.

George Kurtzrock, Ph.D.
Associate Professor, Speech and Audiology, and
Acting Director, Speech and Hearing Laboratories,
University of Nebraska

In my opinion, this project represents one of the most ingenious, interesting and instructive approaches to the education of the acoustically impaired that has been undertaken in some time. Basically, it attacks several of the major problems facing the educator of the deaf and hard of hearing, and provides a multitude of potential uses for all educators. Following are my responses to the specific questions presented by you.

1. Do you consider this type of laboratory arrangement to be feasible for teaching the acoustically handicapped?

My answer to this is an emphatic Yes! This is the basic purpose of the study and the excellent documentation provided by the evaluations, the observation films and by personal observation and use substantiate the emphasis.

2. What operational feature(s) of the equipment do you believe to be most important?

The features most important to me were (1) ease of operation, (2) continuous loop, (3) both auditory and visual control, (4) intimacy of situation (rear screen). I was not particularly impressed with the general setup of the booth itself. I was disappointed in the photographic quality of the film.

3. What instructional situation do you think is most suitable for presentation by this medium (8mm film)?

Assuming that the quality of picture is simply a problem of improved photography and not a basic limitation, I feel that nearly all instructional situations can be enhanced by the use of this medium. Initial presentation, review, testing, etc., can all be suitably presented.

4. What precautionary advice would you give to educators planning similar instructional media programs?

I believe the approach used in this study can well be a useful example for others. It requires a person with energy, interest, imagination, ingenuity and purpose, supported by a group of dedicated people with varied backgrounds or experience related to this type of research, and each member a specialist in his own field--auditory, learning theory, testing, administration, teaching--with a sense of responsibility for his contribution to the study. The research plan should include consultation periods for this group, to provide opportunities for instruction and for guidance of the project.

5. Do you believe that this media system has application for teaching other children?

I believe it has perhaps even greater application for teaching the retarded and the brain-damaged. As noted in the case studies and as I noted in our use of the materials at the Speech and Hearing Laboratory, those children with "other" problems responded as well as, and in some cases better than, the acoustically handicapped. Additionally, I believe this system can be used by adults to broaden and expand the teaching-learning process.

In summary, it is my opinion that this study has demonstrated the feasibility of this type of Learning Laboratory for Hard of Hearing Children. More importantly, perhaps, this study provides important guidelines for future work in this area as well as for the use of the medium in other instructional situations.

Edgar L. Lowell, Ph.D., Administrator,
John Tracy Clinic,
Los Angeles, California

1. Yes, the laboratory arrangement is definitely feasible for teaching the acoustically handicapped. It may take some time to get our teachers over their current habits but that is not an insurmountable problem.

2. The self operation features of the equipment seem most important to me. The full benefit of time-saving for the teacher cannot be realized if she has to be present to manipulate and operate the equipment.

3. I would think that concept development work might be most valuable for presentation by this media. I am thinking here of the scores of concept work that a child might need considerable practice on, particularly where different children might go at different speeds.

4. Since this is still in the investigation stages, I would have very few cautions to give. One, however, might be to be sure that you have a competent audiovisual department close at hand for professional help.

5. I think this media system very definitely has application for other teaching. This or some other sort of easy cartridge loading device seems to be an obvious direction for development of wider use of films in all kinds of teaching.

General comments. I am greatly impressed by the success of this project. When you make a careful analysis of how much time a child spends in formal learning, or even drill work, you cannot help but be impressed by the constant attention generated by this technique. I also think that your split screen technique offers very exciting possibilities for both research in the learning process and in the preparation of teachers. One obvious need for success of this technique would be the development of a much larger library of cartridges so that the machines could be used on a regular basis, fitting into all aspects of the curriculum without boring the child.

Wesley C. Meierhenry, Ph.D.
Assistant Dean of Teachers College, and
Professor of Education,
University of Nebraska

1. My observations of the laboratory led me to react positively to the feasibility of the arrangement for providing highly repetitive and supplementary experiences for the acoustically handicapped. It seems to me that the arrangement, which was not developed to be completely self-instructional, is, nevertheless, operationally sound for basic and supplementary experiences. The equipment is of such a nature that young children can operate it successfully. The isolation in the carrel did not seem to provide a problem to the children, possibly in part because the amount of time spent in the booth was not great compared to the amount of time spent with the peer group. I feel, therefore, that the equipment and the physical arrangements were adequately tested to demonstrate the feasibility of the arrangement.

2. The operational features of the equipment which I consider to be significant are as follows:

a. Simplicity of operation of the projector--it has been demonstrated that the projector itself can be operated by very young children with ease. The "on-off" lever is a simple device to operate and focusing aspects can also be comprehended by immature children quite easily.

b. The packaging of the film in cartridges is another very important positive feature. The children very quicly became adept in the handling and insertion of the cartridges into the machine. If the children had to learn how to thread a projector, it would considerably complicate the situation.

c. The use of the headphones seemed to be an appropriate way of at least cueing the children that they should look at the screen. Whether the head sets were the most appropriate devices for this function is not entirely clear.

3. As was indicated above, my observations led me to believe that the film presentation could serve for basic

instruction as well as for supplementary kinds of experiences. The design of the motion pictures makes it possible to use the film as an information source and to also provide for response and reinforcement. Therefore, it would appear that the 8mm technique as developed in a series of experimental films can provide basic or total instruction.

4. A major problem in applying this approach generally is the difficulty of comprehending the scope of the instructional system which is involved. There is a problem, on the one hand, of pre-testing to determine what needs to be presented in the instructional sequence. After a determination is made as to what information, knowledge, and concepts are going to be presented, the determination of how much time should be allotted is an important matter. If the material is too simple, appears to be repetitious to the learner, or otherwise fails to engage his attention, he is likely to lose interest. If, on the other hand, too brief a treatment is given to the material, the learner will not be sufficiently engaged to master the content. A further question revolves around whether or not it is necessary to present only one bit of information or concept at a time or if it is possible to involve the learner in a range of learning activities.

The whole scheme pre-supposes, therefore, considerable knowledge about relevant experiences which learners must have. It presumes further that the producer is also well acquainted with scope and sequence problems in every area of knowledge.

5. It is evident that the films as prepared can be used very successfully with acoustically handicapped children. The general design of presenting certain stimulus materials and also incorporating the idea of response makes possible a complete teaching sequence. The technique, therefore, is obviously successful with the above mentioned class of children, but the general design seems applicable to many other teaching situations in both the field of special education as well as normal classroom situations. Although the current project has not tested these procedures, the empirical evidence would suggest that the technique would work with a wide range of content as well as subjects.

Among the striking features of the project, perhaps the most significant to me was the ability of the medium to engage the learner in a personal and intimate way. I have never seen demonstrated any more clearly the fact that only human beings would ordinarily be expected to perform as in this study. Examples of this kind of situation arose in the films dealing with the taking of the toy cars out of the box by the teacher. At least one child stood up as if to look in the box while the opening of the box was in fact only projected on the screen. In the film dealing with foods, I personally observed a child motioning to put certain foods away which he obviously disliked, making weird faces as various condiments such as pepper were shown to him, all as if he were in a real situation rather than the material being presented on motion pictures. The question, therefore, as to whether the medium can stand _in loco_ teacher is demonstrated in a dramatic fashion. It is possible to develop materials which would involve the learner in a private and familiar way.

Dr. John H. Wiley,
Chief, Division of Communicative Disorders,
Nebraska Psychiatric Institute, and
Associate Professor, Speech Pathology,
Department of Neurology and Psychiatry,
College of Medicine, and
Associate Professor, Departments of Speech
and Educational Psychology, University
of Nebraska

My observations on this project include attending the Advisory Committee meetings, some informal discussions with Dr. Stepp, and utilizing the projector and some films with a group of children with "central language disorders" during the summer of 1964.

The laboratory arrangement with the projector and films seems to me to be a feasible way of teaching the acoustically handicapped. The children watch the films with real interest, and they seem to learn to operate the projector effectively. Subjectively, the films are very well planned and attractively executed. Our experience with children with language problems was similar--the children enjoyed the films and would watch them a number of times.

The relative ease of handling the equipment seems to be the most important feature. Controls are few and simple to operate. The instruction film seems to work well. The level of lighting of the picture seems to be satisfactory in a lighted room. Being able to utilize fairly short samples of film is important, so that each film does not involve too many separate concepts.

It seems to me that presenting lnaguage learning materials is one of the best uses. Teaching a child to associate lip and facial movements with certain objects or activities has been done well in this project. Other language learning might take place, combining visual and auditory stimuli. This technique allows comparison of various ways of presenting the same material, and gives the child an opportunity for varying the number of presentations to serve his needs.

Various types of motor tasks could be presented this way. This could be quite effective by having the child perform the task and then recheck with the projected sequence.

In order to use this media satisfactorily, the instructor must know what he hopes to accomplish and construct a careful progression of steps to reach the goal. Materials need to be simple, but interesting, and the steps of learning should be kept small. Repetition is needed, but not exact repetition or the sequence becomes boring. The film needs to be varied so that the viewer will want to watch it several times. Items presented need to be large enough to be seen easily. Perhaps the first step is planning the unit to be presented, so it has unity, and does not depend on other information which the child might not have.

I can see applications of this media system to children with many types of language problems (reading, central language, etc.). It could also be used with adults with language problems. Perhaps it could be used as a laboratory facility in the presentation of academic subjects as well.

The excellence of the films and the careful attention to detail that has gone into this study have made this project a success. Many areas remain to be explored, such as: varying filming techniques, different types of subject matter presented, optimum length of presentation, and viewing circumstances. It seems to me this project has demonstrated that this type of film can be made, and that children can learn to operate the projector (and will watch it for extended lengths of time).

Recommendations

This project sought primarily to prove the feasibility of operating a learning laboratory for facilitating the practice of lipreading exercises by the acoustically handicapped. In the process of developing this study and exploring this dimension of teaching, several problems arose which suggested topics for future research. These topics could be classified into eight areas:

1. Field studies. First of all, there is a need to field test this instructional system with a larger population and under different environmental circumstances. During this period of validation, several questions need answering. Is this type of independent instruction best suited to be performed (a) in the classroom as a part of the daily room activities; (b) in a separate laboratory arrangement as a library resource; (c) in the residential halls as a part of an evening study hall period; or (d) in the home as an extension of the school day? How will the children who have the opportunity to practice lipreading at their own convenience and pace compare with a matched group who receive all their instruction by present established procedures? What is the difference in lipreading development for children who as a group watch the films on a large projection screen as compared with children who singly use the study carrel in the laboratory?

2. Subject areas. This study was limited to three short units of instruction. These filmed units were not designed to teach any specific section from an existing curriculum, but were selected to represent what might be done to assist in teaching vocabularies, concepts, and related information. The utilization of this system in teaching the basic curriculum posed more questions. What subject matter can best be presented by a media system similar to the one tested in this study? How do you identify a unit of instruction which can

be presented by this means? If you employ independent study techniques, do you use this time to teach vocabulary? facts? concepts? or other levels of understanding?

3. Plan of instruction. This project explored the use of lipreading films as an introduction, followup, and basic instruction. An analysis of the method itself brought forth an equal number of questions: Can the acoustically handicapped child progress at an acceptable rate when he receives his basic instruction from an independent learning system in which the classroom teacher serves as a tutor/guide to the learning experience? Or should this type of independent study be purely supplemental? What design elements should a supplemental lesson have? How much repetition should be built into a film lesson? What is the optimum film viewing time? How often should a child view these materials? How much of the child's day can he spend in useful, meaningful, independent study activities? Is there a fundamental, logical plan for presenting filmed lipreading lessons? Is it necessary to involve the child in the study of the films to the point of eliciting an overt response? What type of responses are most meaningful to the practice of lipreading? Should the film serve as a model to be imitated, as medium of demonstration to be observed, or as a vehicle of communication to be interpreted?

4. Production. The films in this project were designed so that the film teacher (narrator) was always visible. They

were also planned and photographed from the learner's viewpoint. The variable "language" of the film medium caused speculation as to its effect on the program: What is the most effective way to convey the film narration to an acoustically handicapped person? Should you use captions? A visible narrator? A highly visual format? Or a combination of all three? Is it feasible to superimpose (by inset) a visible narrator on existing instructional films? Is it possible to teach a person to scan a scene simultaneously for content and visual narration? What effect does visual motion picture production techniques of dissolves, cuts, fades, time lapse, split screen, etc., have on the learning rate of a handicapped person whose understanding of such treatments is limited? Should instructional films for the deaf have sound? What is the role of the classroom teacher in designing films for the deaf?

5. Teacher-learner roles. The films in this project were planned to function as resource material for the teacher to prescribe for specific study according to student needs. For the learner, the films were structured so that after presentation the viewer was asked to respond in various ways to a series of questions following which he received visual confirmation as to the correctness of his response. The relationship of teacher to student in an instructional system program needs further study. What is the teacher's role in utilizing an instructional media system? How do you insure interaction between film teacher and student similar to the

rapport established with the regular teacher? Does interaction with film teacher depend on the requirement of eliciting overt responses from the viewer? Is visual confirmation necessary to insure correctness of learning? How frequently should reinforcements be given when employed? How independent should study in a learning laboratory be?

6. Learning laboratory. For this study, language laboratory booths were modified to provide additional space for the 8mm motion picture projector and the manipulative materials. Facilities for instruction is one area that is extremely important for special education programs. What is the best functional design for a study carrel for the acoustically handicapped? What type of work-study space should it contain? What visual and auditory devices should be an integral part of the booth? What responsibility should the child have for handling, loading, and operating his own program? What operational controls should be delegated to the learner? How much classroom space should be directed to learning laboratory booths?

7. Media. This experiment used 8mm sound motion pictures in cartridges as the basic medium in the instructional system. Instructional technology today encompasses a wide range of media. Each type of instructional material, by its design, has a unique application in the teaching-learning process. The problem is to prescribe the resource which not only conveys the instructional idea, but by its inherent

qualities causes the learner to react. In what areas of the curriculum or in what learning activities can 8mm films be advantageously used? What is the potential of other media for self-study programs? What is the unique contribution of broadcast television or closed circuit television to an instructional media system in which the video tape recorder is the basic instrument? What advantages do the immediate record and playback features of the video recorder provide for the instruction of the acoustically handicapped? Is it necessary for a child to see himself in his learning environment? Should he have the opportunity to observe his own reactions and compare his efforts with a model performance? What part of a unit might be best presented with slides or filmstrips and perhaps with synchronized sound? What advantages does the overhead projector offer in the teaching of the deaf? What principles of programmed learning are applicable to teaching the deaf? Can visual programming be patterned to follow these principles?

8. Related areas. This study was planned for elementary acoustically handicapped children. Two of the children had the additional problem of being cerebral palsied. Their success in the program suggests its application with other groups. Can a similar media system be employed to assist in the teaching of the educable mentally handicapped? Trainable mentally handicapped? Aphasiacs? Can a similar approach be used to help people who have a speech difficulty? Will the

system work for adults? Does the simplicity of the cartridge load feature permit widespread distribution of learning programs to all ages regardless of where they reside, or the circumstances under which they work? Is this perhaps a means by which parents of the deaf can be educated to understand their children and assist in their education? Does this offer the possibility of instructional continuity between school and home?

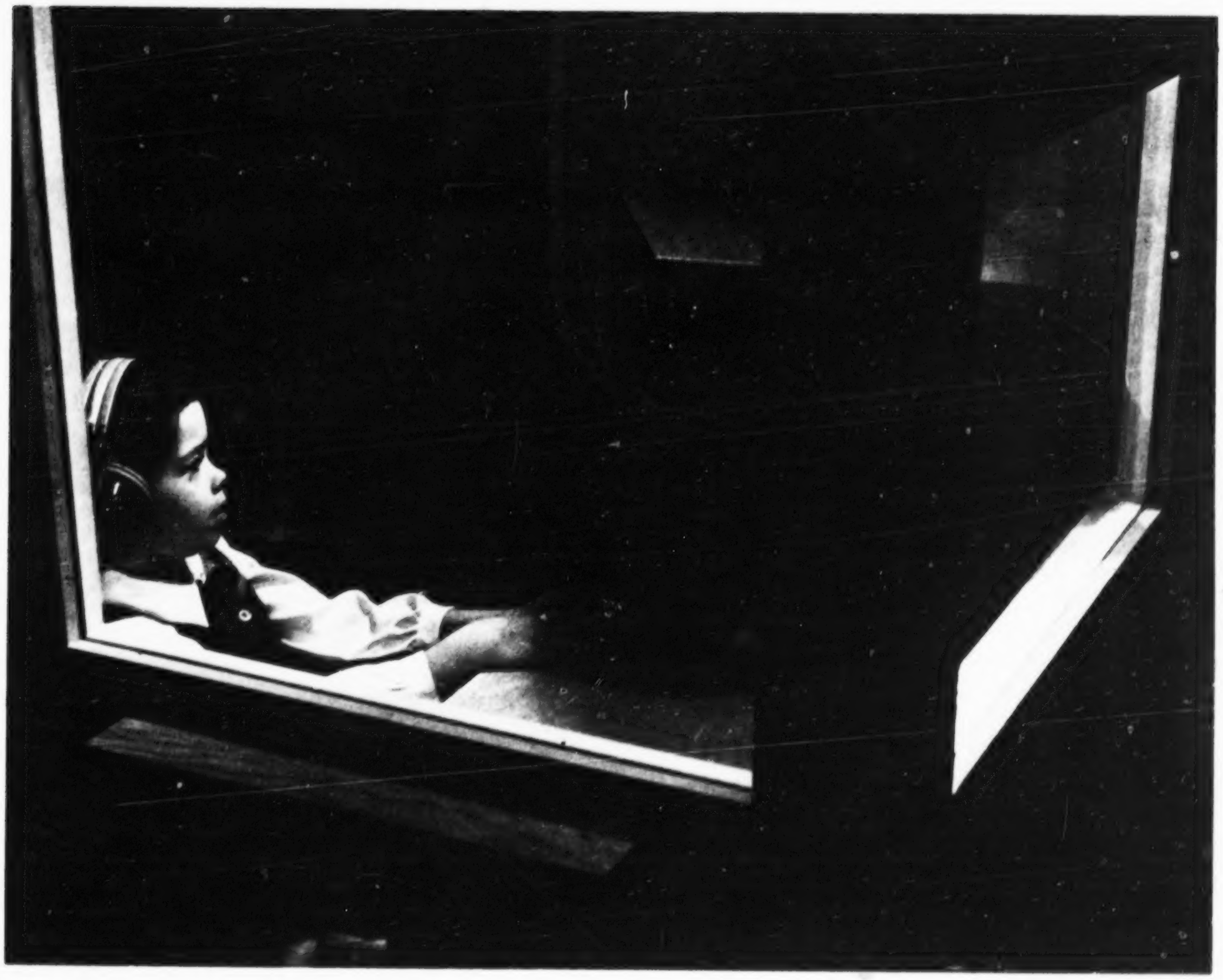
Research Program

An extensive research program in studying the application of instructional technology to the problems of teaching the acoustically handicapped is recommended. A united assault by educators of the deaf, comparable with research being done to identify causes of deafness, is warranted. At least ten per cent of the instructional budget for each school's educational program should be designated for research and development of teaching materials and methods. Every school teaching the hearing impaired should encourage teachers to design and produce teaching materials which are unique to the problems of teaching the deaf. These materials, after careful experimentation and validation, should be shared among all members of the profession.

To assist in disseminating and distributing these resources, an agency should be formed to serve as a clearing house for the acquisition, publication, and production of these special materials. To keep pace with the rapidly changing technology, a research and development center for testing and evaluating the latest in instructional instruments is also recommended. This center could also have the responsibility for designing new instructional equipment. Scientists conducting basic research have found ways to design and construct the instruments they needed for their explorations. Why cannot research into instructional procedures be as innovative?

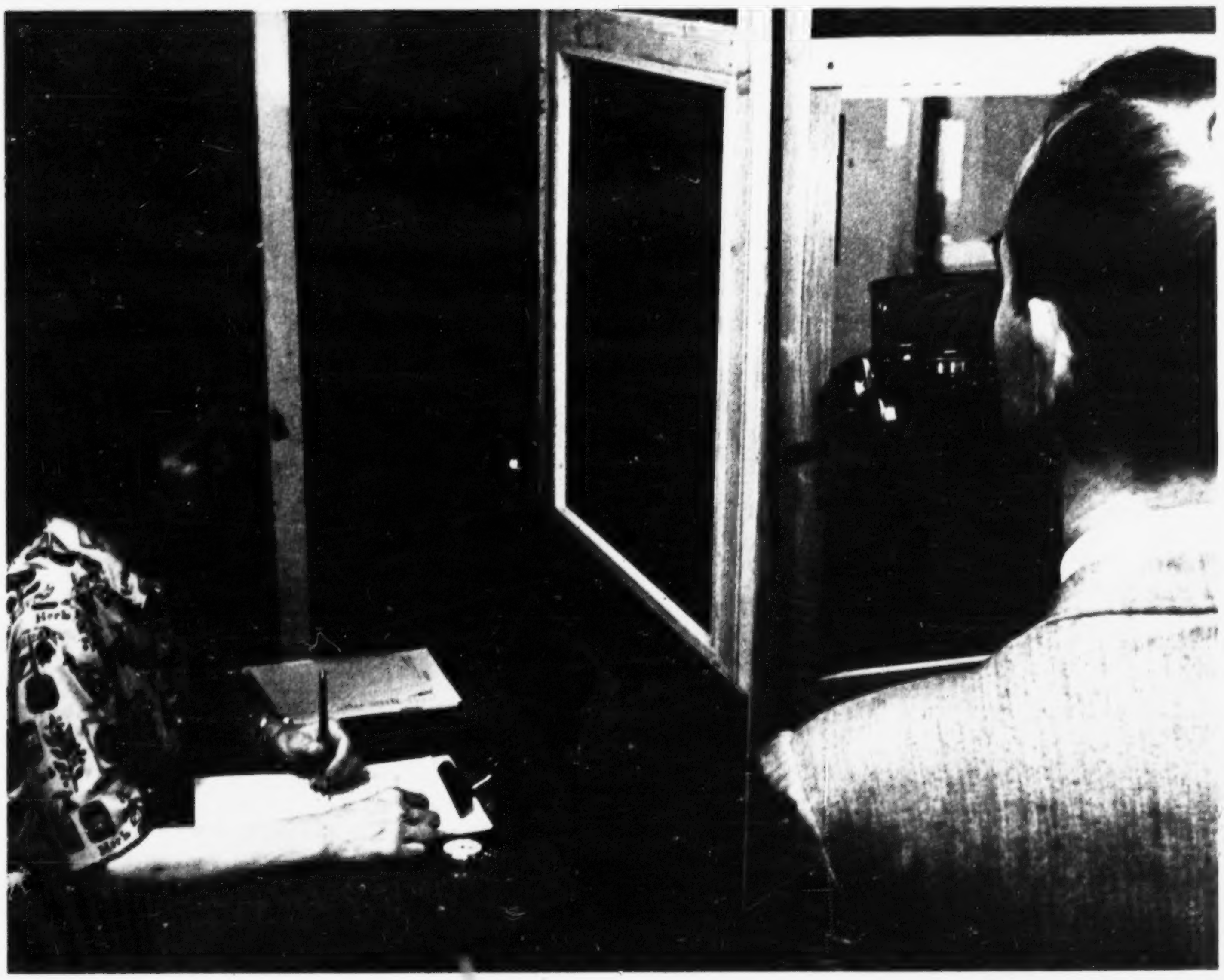
In this age of advanced technology, there is no reason for the deaf to be deprived of essential learning resources. The challenge is to determine what is feasible, what is functional, what is practical, and what is effective. Instructional communication is a science in its own right.

APPENDICES



STUDENT OBSERVATION

APPENDIX A
EVALUATOR'S REPORT



DOCUMENTATION

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Project Observer-Evaluator

Appendix A

Section 1. Function of the Observer-Evaluator

The function of the observer-evaluator was to aid in determining feasibility of the use of this visual instructional system by

a. compiling information concerning the home and school background of each subject;

b. recording data which graphically illustrated the child's behavioral pattern during actual viewing of the films;

c. clarifying the child's reactions by use of anecdotal records based on periodic observation;

d. aiding in the summarization of the results by compiling a case study of each subject, taking into consideration his personality, ability, and training, and relating this information to his viewing behavior, average viewing pattern, and total response record;

e. synthesizing the findings by means of graphic portrayals presenting a composite viewing record of all subjects studied, and a table showing percentages of correct responses obtained.

Appendix A

The evaluator was released half-time from the Lincoln Public Schools to serve on the project staff. A daily schedule of observations was arranged with the classroom teacher. The evaluator studied the student reactions through one-way mirrors that were built into the walls of a specially designed observation booth. The children were not aware that they were being observed. The evaluator plotted each observation on a grid system which showed either attention span or response rate, depending on which type of film the student was watching. The data for the final report was compiled from all of these observations.

Appendix A

Section 2. Instructional Films Analysis

All twenty-five of the teaching films were produced on 16mm stock and reduced to 8mm color prints. Each film has a magnetic sound track which offers an option of viewing with or without supporting sound. All shots in these films were taken from the learner's viewpoint and were planned to simulate tutorial speechreading instruction.

These films were grouped into three speechreading instructional units: single word emphasis approach, associated word approach, and the multiple word approach. These categories were established in order to broaden the study of feasibility. The first film series, cartridges #2 - #13, taught and tested the student's ability to lipread four beginning vocabulary words. The second series, cartridges #14 - #19, dealt with the teaching of the concept of left and right. The third series, cartridges #20 - #25, were planned to teach a basic vocabulary about breakfast, lunch and dinner foods. The film test in each series required an overt response from the student as an indication of his ability to speechread the selected vocabulary. A separate film, not included in any of the named series, was the production which demonstrated to the student how to operate the 8mm projector.

This section of the appendix contains an explanation of the film content, a count of the frequency of use of key words in the narration, a discussion of the instructional plan, and general comments about utilization of each film. Common words in the carrier phrases which provide the language continuity were not counted in the frequency chart.

In the general comments about each viewing, the following scale was used for interpretation of viewing interest:

Rating Scale:	Attention Span
5 - Intent Interest	No Distraction
4 - Prolonged Interest	Slight Distraction
3 - General Interest	Some Distraction
2 - Occasional Interest	Frequent Distraction
1 - Spasmodic Interest	Considerable Distraction
0 - No Interest	Complete Distraction

Appendix A

Film Series One: Single-Word-Emphasis Approach

This series was considered to be an introduction to the project. The four words being presented in this elementary vocabulary study were familiar to the students. The value of the filmed materials was to give lipreading practice for the four key words, condition the students to operating the equipment while studying familiar material, and study the feasibility of eliciting overt responses from the children when requested by the film teacher. The instructional plan of the series was a three cycle structure of presentation, review, and response films. The initial lipreading word "car" was presented; followed by a presentation film on the word "ball." Then a review film on the two words "car-ball," and a response film checking the ability to lipread "car-ball." To this cycle was added the word "doll" which progressed through each stage, and finally the fourth word "tractor" was included in the developmental plan. One of the benefits to filmed teaching is the increased exposure of the student to carrier phrases and auxiliary words which give continuity and meaning to the word study.

At the end of the unit a film test was designed which asked the student to take the four objects from a shelf in the booth and to place them in front of him. The film teacher then proceeded to quiz the student on his ability to lipread these words by asking him to point ("show me") to the objects. A second version of this form of film test was prepared by a different teacher giving the students the opportunity to lipread the words spoken by two people.

Appendix A

Film Cartridge #1

Description: This 7½ minute film was designed to instruct the student in the operation of the 8mm projector. The film teacher demonstrated in a sequential manner the steps required to turn the projector on and off, insert the film cartridge in the projector, place headphones on the head, and adjust the volume sound control. The film teacher served as a visible narrator so that the student could also lipread the instructions. Extensive use of close-ups and cuts were employed in the production of the film in order to enhance the pictorial communication aspects of the demonstration. In the closing sequence of the film, a child actor performs the prescribed operational functions. The intent of this summary sequence is for the child viewer to identify himself with the student actor and gain confidence in his ability to perform these same acts.

Key Word Count: Frequency of Use in Narration

Turn	16	Push	9
On	11	Pull	3
Off	12	Loud	7
Pictures	10	Soft	3

Comment: In the concluding scene the film teacher says, "Now you do it," at which time the classroom teacher steps into the booth and hands the student a film cartridge then proceeds to try the procedure for himself.

Appendix A

Film Cartridge #2

Description: The first film in this series was a lesson on lipreading the word "car." In the opening scene the film teacher showed her car and created some curiosity about what might be in the trunk. When the trunk was opened, four boxes were visible. These boxes contained the teaching materials for this entire series. When the first box was opened, it contained all types of toy cars and thereby provided the instructional comments for the lipreading exercise. In the closing scene of the film, the teacher selected her favorite car (color and model of car in opening scene) and placed the car in a clear plastic container. This identical plastic box containing the car was used later in the booth for the response films. This presentation film was 8½ minutes in length.

Key Word Count: Frequency of Use in Narration

Car	115	Red	10
Blue	17	Have	13
Put	14	See	10
Pretty	14	Green	3

Comment: The eleven subjects viewed this film a total of 118 times. The composite viewing record showed the interest level ranging from "occasional" to "intent" with a greater grouping at the "prolonged" and "intent" levels.

More distractions occurred during viewing of this first film than during any of the others. Many factors were responsible.

Bright lights used during filming of the subjects were distracting and made "watching" somewhat uncomfortable due to heat and glare. Mirrors on two sides were visible and were especially well-lighted by the overhead bulbs. Some of the children found these very distracting. The unfamiliar situation (new surroundings, being left alone in the booth, etc.) made concentration difficult. Another factor that might have been involved at this stage in the project was the possible lack of pupil understanding of the purpose of the viewings. At first the children may have thought these films were merely entertainment like television, so it was not necessary to concentrate. This material was elementary for some of the subjects also.

In view of the stated factors, it was most gratifying to note that the average interest level was relatively high.

Film Cartridge #3

Description: Following the instructional plan established in film #2, a second box was removed from the trunk of the car. Again an element of curiosity was interjected into the film. This box contained the materials for teaching the lipreading exercise on the word "ball." All kinds and sizes of balls were removed from the box one at a time. Again at the close of the film the teacher selected a favorite item and placed this ball in a clear plastic container. This cartridge taught the word "ball" in a five-minute presentation.

Appendix A

Key Word Count: Frequency of Use in Narration

Ball	69	Have	5
Put	14	Get	5
Pretty	10		

Comment: The composite viewing record showed no drops below the "prolonged" interest level with most of the grouping at "intent" interest. The children became more attentive viewers as they became familiar with the surroundings and began to gain an understanding of the purpose of the film presentations. This film was a favorite. The youngsters especially enjoyed the suspense of watching several balls roll through a tube.

Film Cartridge #4

Description: This film began with the film teacher placing the plastic box containing the car in front of her, opening the box, removing the car, and proceeding with a review lesson. Later in the film the plastic box containing the ball was revealed and a review lipreading sequence was centered around the word "ball." This cartridge, a review of the words "car" and "ball," was 4 minutes and 48 seconds in length.

Key Word Count: Frequency of Use in Narration

Ball	38	Blue	9
Car	36	Have	8
Put	21	Pretty	7

Comment: The interest level approximated that of cartridge #2, sometimes dropping to "occasional" interest, but mostly maintained at "prolonged" to "intent" interest. This occasional interest drop was probably due to the fact that the children had developed such great familiarity with the material that some boredom occurred. It was found that more than two viewings at one sitting did not hold their interest.

Film Cartridge #5

Description: This instructional response film opened with the film teacher saying, "Let's play a game with the car and the ball. I have a car. You have a car." These statements directed the child's attention to the fact that the identical plastic boxes containing a car and a ball which he saw in the film were also on a shelf in the booth. The teacher reached for her box with the car and placed it in front of her. She verbally instructed the child to do the same thing and indicated where he should place the object in front of him. The same procedure followed for the box containing the ball. After the objects were in position, the film teacher gave a lipreading drill on the two words. To her questions, "Show me the ___________" or "Where is the __________," the child indicated his ability to lipread the words by pointing to the proper item. After a slight pause for the child to respond, the film teacher also pointed to the item giving confirmation to the child as to his correctness of response. At the conclusion of the drill, the film teacher verbally instructed the child when to return each object to the shelf. Not only was this a lipreading drill, but it was also a lesson in lipreading and following directions. This film tested the lipreading ability learned through use of the first three cartridges and was 2½ minutes in length.

Key Word Count: Frequency of Use in Narration

Ball	16
Car	17
Put	12
Show	5
Have	4

Comment: This proved to be a well-planned response film. Nine responses were requested, requiring the children to place the objects, then point to them. Out of 549 possible responses, the students scored 526 correct, or were 96% accurate, an extremely high rating.

Film Cartridge #6

Description: This presentation film was a lesson on the lipreading of the word "doll." The first scene was the removal of another box from the trunk of the car and the general revealment of the various dolls that it contained. The many types and sizes of dolls made possible an interesting dialogue for the students to lipread. In the last scene of the film, the teacher's favorite doll was placed in a clear plastic container. Cartridge #6 was nearly 7 minutes in length and presented the word "doll."

Key Word Count: Frequency of Use in Narration

Doll	70
See	10
Put	8
Pretty	5

Comment: The children were delighted with this film, watched intently, and laughed aloud at the mop-haired doll. This proved to be the most popular film up to this point and rated mostly at the "intent" interest level with no drops below "prolonged" interest.

Film Cartridge #7

Description: This film followed the pattern adopted in cartridge #4 which reviewed the previously taught material. Again the objects in the plastic containers were the beginning point of discussion. New material also was introduced which enabled the further development of the lipreading review exercise. This review film on "car-ball-doll" lasted 7 minutes and 38 seconds.

Key Word Count: Frequency of Use in Narration

Doll	33	Put	20
Car	30	Away	8
Ball	29	Pretty	5

Comment: As in the previous review film interest dropped frequently to the "general" and "occasional" interest levels.

Appendix A

Film Cartridge #8

Description: An arrangement similar to the one described for cartridge #5 was employed again. This time three plastic containers were in the booth and the child was instructed by the film teacher where to place them. The lipreading drill was on the words "car-ball-doll." This instructional response film was 3½ minutes in length and was programmed to elicit twelve responses.

Key Word Count: Frequency of Use in Narration

Car	15	Have	6
Ball	13	Where	5
Doll	17	Get	4
Put	15	Show	2
Take	7		

Comment: The youngsters averaged 93% correct on these responses. Five of them received a 100% correct rating, but the youngest child missed more responses and failed to respond more times than in the previous response test. This may reflect the fact that there seemed to be a flaw inherent in the film structure. This was due to the fact that the final three responses were difficult to decode as the pattern had changed. The children were not sure when to pick up the toy. For instance, the teacher said, "Take your doll," then said, "Put it here," as she did so; then repeated the directions. In response film #5, she said, "I'll take my doll and put it here." Then after she had done so, she told the child, "You take your doll, etc." Response film #5 was much clearer and more explicit. After having viewed it, on film #8 the children thought that they were to wait until the teacher had moved the toy, yet now were invited to move it simultaneously.

Film Cartridge #9

Description: The fourth box was removed from the trunk of the car. The instructional materials fro the lipreading lesson on the word "tractor" were removed one at a time from the box. A degree of suspense was maintained in this manner. In the last scene, the film teacher's favorite toy tractor was placed in a clear plastic container as a means of calling special attention to the item. This film taught "tractor", first two-syllable word introduced, and was 5 minutes and 7 seconds in length.

Key Word Count: Frequency of Use in Narration

Tractor	56
Put	5
Pretty	4
See	7
Take	3

Comment: Some of the mechanically-minded boys especially liked this film. The interest level again remained in the two top brackets.

Film Cartridge #10

Description: The plan of this film was similar to the other review films. Although the lipreading exercise was over familiar vocabulary more new material was introduced in this film than had been previously employed. This "doll-tractor" review film was a short 5 minute production.

Key Word Count: Frequency of Use in Narration

Doll	35	Here	4
Tractor	17	Pretty	3
Put	11	Red	3
Get	5		

Comment: This was a well-designed review film and was enjoyed by the majority of the children. The interest level would have remained in the two top brackets except for one subject who was distracted more than usual during his seven viewings of this film. He never did rise above the "general" to "prolonged" ranking.

Film Cartridge #11

Description: Response cartridge #11 took 4 minutes, 12 seconds, longest of the single-word response films. The four words taught thus far were tested, using the same methods as in previous response films. The boxes containing the objects must be placed according to directions from the film teacher, then the various objects designated by pointing. No sound was used in this test, making close concentration vital. Visual confirmation was also given in this test by the film teacher as described in the previous response films.

Appendix A

Key Word Count: Frequence of Use in Narration

Car	15	Here	7
Tractor	14	Get	6
Ball	12	Where	5
Doll	12	Go	3
Put	20	Show	2

Comment: Out of 448 possible responses, 427 were correct, or 95%, a very high rating for this number of responses. This rating indicated that learning did take place and lipreading ability for these words improved as well as their ability to follow directions.

The youngest child, who had brought the rating down in the previous response film, missed only one question and did not fail to respond once. Her learning progress appeared to have been very great during the single word series.

Case Study IX missed 11 responses. He had less training than most of the other children and had a profound hearing loss. The anecdotal record indicated that he became confused, was not concentrating closely, and failed to look at teacher's lips much of the time. He was quite unsure of himself and wanted to wait for cues. (Perhaps he had been receiving more help from the sound than was realized.)

The 95% rating on this final test was very gratifying. It was an excellently prepared film except for the fact that the timing of the picture was slow for some subjects. The child was expected to pick up the object and hold it until teacher said to place it. This long pause created an unnatural situation for the child. This possibly did teach him to wait for directions, yet the delay was frustrating and pointless to the bright and fast-moving child. Some pause was essential, however, as if it were speeded too much, the slower children would have difficulty.

Film Cartridge #12

Description: Cartridge #12 was a 3½ minute film and tested the student's ability to lipread the words "car-ball-doll-tractor," based on film lessons #2 - #11. It was necessary for the child to place the plastic boxes containing the objects in front of him when instructed by the film teacher and to designate them by pointing. There were 23 responses required. No imitated response was possible because no cueing was given. Visual confirmation was not given by the film teacher. This was a lipreading film test. The only visual clues were through lip movements, therefore the only way the child understood the directions was to lipread. In this film the unit film teacher gave the lipreading test.

Key Word Count: Frequency of Use in Narration

Tractor	11	Ball	9
Show	11	Doll	9
Put	11	Get	5
Car	10	Take	3

Comment: There was a lack of response at the beginning of this film for many of the children. They expected visual clues at first, such as they had observed in the earlier response films. As soon as they realized they must rely on lipreading ability only, they started to respond correctly. This film test was administered one month after the end of the unit and again five months after the initial teaching. In each instance the average rating was 80% accuracy.

Film Cartridge #13

Description: This was a response film of 3 minutes, 12 seconds in length, requiring 20 responses. It was designed to test lipreading ability for the four words presented in the single-word series. The objects were presented in clear plastic containers; the child must place them on the counter before him according to direction, and then must designate objects named by pointing as in the other response films. A different film teacher administered the test, thereby giving a check on the child's ability to read the lips of another person. No manipulative cues were given. No visual confirmation was provided.

Key Word Count: Frequency of Use in Narration

Car	16	Tractor	7
Ball	16	Get	7
Doll	13	Away	6
Put	10	Here	4

Appendix A

Comment: This film was administered six months after the end of the instructional unit or one month after giving film test #12. The children exhibited no difficulty in lipreading a different film teacher. The average response rating for this film test was 76% correct.

FILM SERIES ONE

Number of Viewings and Evaluations

	Film Cartridges																							
Case Studies	2		3		4		5		6		7		8		9		10		11		12		13	
	V	E	V	E	V	E	V	E	V	E	V	E	V	E	V	E	V	E	V	E	V	E	V	E
I	10	6	12	7	6	4	5	3	11	6	7	2	9	4	14	6	7	4	1	1	2	2	1	1
II	11	5	15	10	14	8	4	2	11	5	5	3	6	4	9	4	6	3	1	1	2	2	1	1
III	10	6	10	8	10	8	9	5	6	5	1	1	3	1						1				
IV	15	7	14	9	9	4	9	6	11	7	6	4	4	2	6	3	6	2	1	1	2	2	1	1
V	8	6	8	8	6	6	4	4	7	7	7	5	3	2	8	4	4	2	1	1	2	2	1	1
VI	12	9	10	10	10	9	9	6	8	4	2	2	4	2	7	5	7	5	1	1	2	2	1	1
VII	13	10	10	10	9	9	7	6	12	5	7	5	5	2	6	4	7	4	1	1	2	2	1	1
VIII	11	7	8	8	8	6	5	5	7	7	7	5	2	2	10	8	5	3	1	1	2	2	1	1
IX	11	9	13	11	9	9	11	10	13	6	8	5	3	2	8	6	9	6	1	1	2	2	1	1
X	9	6	5	5	5	4	7	6	5	5	3	1	2	2	9	6	6	4	1	1	2	2	1	1
XI	8	6	6	6	7	7	5	5	4	4	6	3	1	1	4	3	5	2	1	1				

V - Total Number of Viewings
E - Number of Evaluations

Appendix A

Series Two: Associated-Word Approach

This film series was designed to teach the concept of left and right simultaneously with the development of the ability of the student to lipread the words "left" and "right." The instructional plan was the combination of the response requests along with the teaching sequence. The response pattern was built into each teaching film in contrast to the separate presentation, review, and response films of the first series.

The content of the films was based on left to right relationships, identification of objects which have a left or right orientation, left and right directions, and placement of items in reference to a left and right position. Familiar objects, such as mittens, shoes, bicycles, signs, tableware, were used as instructional materials. The film teacher served as a visible narrator and taught the concept in terms of the viewer's left and right. Visual confirmation was provided by the presence in the film of a child actor who gave the correct response after a slight delay allowing the student time to respond first. The child actor was seated facing the film teacher and had her back to the camera so that only her hands and a portion of her head were visible. The student viewer had the same visual orientation to the film teacher as the child actor did and also gained the additional impression that he could compare his responses with that of a fellow student.

Appendix A

The end-of-unit film test on this series required the student to respond by pushing the proper button to light the correct word, "left" or "right." The film teacher asks, "Which one is this? Push the button." or "Which way did it go? Push the button." In this film as in the previous ones in this series, the child actor confirmed the answer by pushing the proper button and lighting the proper word for the viewer to compare with his response.

The final film test in this series was administered as the concluding film of the project. This post test not only checked the lipreading of the words "left" and "right" but also the words "on" and "off" through the use of the autostop feature of the projector.

Film Cartridge #14

Description: This film was the first of the associated-word series designed to teach the concept of left and right, as well as the lipreading of the words. It was 6 minutes and 50 seconds in length. It required 8 responses (all at the end of the film) after a 5 minute teaching sequence.

Key Word Count: Frequency of Use in Narration

Left	41	Ball	3
Right	49	Doll	2
Hand	56	On	3
Show	14	Take	3
Put	27		

Comment: All the children (except the youngest) performed fairly well considering the abstract nature of the film; however, there were many "no responses" recorded for four of the children. The accuracy rating was 74%, a noticeable drop from the rating on the single-word films. It must be borne in mind that in this cartridge only 5 minutes of instruction had occurred before requesting the first responses, whereas in the single-word series each word taught had been presented in at least two films before any testing took place.

Since pre-testing indicated that the majority of the children did not know the left-right concept, it must be assumed they began to understand it as a result of this learning experience. As an example, Case Study VII missed every response the first time and after another viewing got them all right. Some subjects required 3 or 4 viewings before they were successful. By their final viewing all had increased in accuracy, most to 100%. Mastery of this concept seemed to challenge the more intellectually capable youngsters of the group.

This was probably the poorest of the associated-word series. Some flaws became apparent in the film structure. The film child showed her hand too soon after the response was requested of the viewer. This created a visual clue and made it difficult to chart responses accurately. Also, there was some confusion as to whether the teacher was talking to viewer or film child. The response requests all occurred after a long period of viewing and some children did not realize they needed to respond and had to be reminded. They had become passive viewers by the time requests were given. Repeated showings of the film eliminated the confusion as the children became familiar with the response expectations.

Film Cartridge #15

Description: The second of the "left-right" series was 8 minutes and 50 seconds in length. Verbal responses, asking the viewer to speak the words "left" and "right," were required in this film. The requests were made by the film teacher for the child to say the proper word. The instructional theme was the movement of objects to the left or right and the visual interpretation of signs which also pointed left or right. Toy animals, airplanes, and cars were maneuvered in such a manner that the film teacher asked, "Which way did it go?" All movements were oriented to the viewer's left and right. The film teacher was the visible narrator for the lesson.

Key Word Count: Frequency of Use in Narration

Left	33	Turn	6
Right	34	Go	6
Car	15	Take	5
Make	11	Put	2
Have	8	Show	5

Appendix A

Comment: The film required close concentration as time elapsed between response groupings, 2 responses were required near beginning of film, 2 more after 3 minutes of viewing, then 6 at end of film after 1 more minute of teaching. This pattern seemed to hold the children's attention well and kept them alert. Also, it was not easy to anticipate the pattern after repeated viewings.

The accuracy rating on this film was 74%, the same as in the preceding film. Both the older children and the better lip-readers found this film relatively easy to master. Only three of the children had difficulty with this film and frequently did not respond. The youngest child was lost at first and had a high "no response" record. She improved greatly after 6 viewings and missed only 1 response on the seventh viewing, indicating learning had taken place.

Some of the children formed the verbal response with their lips and did not speak aloud, although they were allowed to use a microphone and could have heard their own voices where there was sufficient residual hearing. Only four spoke loudly enough to hear sound, however. The others probably gained little benefit from use of the microphone.

This film was well-designed and held interest throughout by use of an intermittent response pattern.

Appendix A

Film Cartridge #16

Description: This 7½-minute film continued the teaching of the left and right concept. The scene opened with the child actor on a bicycle. On verbal instructions from the film teacher the child actor turned the bicycle handle to the left and right. The bicycle was also used as a vantage point for showing left and right hand, leg, and foot. From this sequence the scene changed to a lipreading lesson on distinguishing between left and right shoes. The student viewer was quizzed about the shoes at the end of the viewing. The child actor served as the means of giving visual confirmation to the correctness of the viewer's responses.

Key Word Count: Frequency of Use in Narration

Left	30	Show	7
Right	32	Which	6
Shoe	35	Put	4
Hand	8	Push	2

Comment: After six minutes of teaching, the learner was asked at the end of the film to respond to six questions. Out of 216 possible correct answers, 162 responses were correct, or 75%. The youngest subject lowered the percentage rating by failing to respond 17 times out of 30. Her responses improved somewhat after 6 viewings. The word "which" was used in each question. Apparently the directions were not clear to this child as she could name which shoe when room teacher pointed, but could not lipread "which." The other 10 subjects were 80% accurate and 2 of the children made no errors in 7 viewings.

Many of the children only formed the words with their lips or said them very softly. Some of the children were not sure a response was expected after this long teaching period and required prompting and encouragement from the room teacher. It might have been better not to have gone into the response pattern quite so abruptly and to have introduced it by saying, "Now you say which shoe is this," or to have required responses at intervals throughout the film.

This was a high interest film and the children watched it intently.

Film Cartridge #17

Description: Film #17 was 7½ minutes in length and required 12 responses. The left-right concept was taught by use of properly-placed table settings. The tableware items used in this film were knife, fork, spoon, glass, and napkin. To respond correctly, the student must lipread the auxiliary words also. The required responses were verbal in form. The viewer was asked to say the words "left" and "right," giving 4 such responses at the beginning of the film, 2 after the lesson had been taught, and at the end he was asked,"Where's the ________?" for 6 responses. The child actor entered the scene after the lesson had been taught and became the reason for reviewing the lesson.

Appendix A

Key Word Count: Frequency of Use in Narration

Left	30	Spoon	8
Right	37	Cup	7
Put	16	Plate	3
Fork	11	Where	6
Knife	8	Take	3

Comment: A 76% accuracy rating was obtained for the overall viewing record. Four of the children had unusually high rates of "no responses." The introductory word "where" may be difficult for some to lipread or the names of the tableware may not have been known. Lack of attention accounted for many of the errors, however.

Although this was a very colorful, attractively-pictured lesson, it did not hold the attention of some of the children as well as earlier films. Perhaps it reminded them of the chore of "setting the table" or it may be that they were restless during these last few weeks of school.

Several of the youngsters were post tested as to proper placement of tableware and gave perfect responses. Apparently they had learned the left-right relationship in regard to arranging a place setting.

Film Cartridge #18

Description: This was the longest production of the first two series. It was almost 10 minutes in length. It was a film test based on the left-right concept and associated-word approach.

Appendix A

The student must lipread the words "left" and "right" and respond by pushing the proper button on a light board. The word "left" or "right" lights up, depending on which button was pushed. A similar device was in the film and the child actor also responded to the question after pausing to allow the student viewer time to respond first. This method gave visual confirmation to the learner as to whether his response was right or wrong. The success of the student on this test depended on his ability to lipread the questions and instructions about what to do, as well as the words "left" and "right."

Key Word Count: Frequency of Use in Narration

Button	58	Take	16
Push	59	Shoe	16
Left	29	Hand	14
Right	35	Mitten	13
Put	23	Go	9

Comment: A high level of interest was maintained throughout the film despite the length. Thirty-one responses were required and must be made frequently throughout the viewing. This presented a great challenge to the younger children.

The request "Push the button" was new to many, and responses were slow on the first half of the viewing. Also the directions on this part of the film were not absolutely clear to the children. They did not always know if the directions were for the film model or for them. Frequently they waited for the child actor to push the button first. All subjects improved in response on the second half where the directions were more definite. The practice gained at the beginning of the film may have helped also.

This was a high-interest production. The lighted box proved fascinating. One child insisted his father help him build a box at home. He became "incensed" at mother when she did not move airplane exactly as film teacher had.

The results of this test were most gratifying and indicated that learning had definitely taken place. From pre-testing it was found the children were hazy in their concept of left and right, or were not familiar with it at all. Most could not lipread the words. The final test showed that through repeated viewings of varied presentations,understanding of the concept was gained or clarified, and all subjects had learned to lipread the words.

Film Cartridge #19

Description: Cartridge #19, a 3-minute, 20-second film test, required 16 responses. The viewer was requested to show his left or right hand for 9 responses. The autostop mechanism of the projector was used for the final 7 responses. In the opening sequence, the film teacher quizzed the learner by asking him to hold up his left or right hand on a random order. After this short drill, one of the 8mm projectors was placed beside the film teacher and she gave the statement, "I'll turn off the projector. You turn it on." The projector automatically stops.

Appendix A

If the viewer lipread the instructions, he knew he was to turn the projector back on. This response was repeated several times. Then the film teacher said, "I'm going to tell you to do two things. I'll turn the projector off. You turn it on with your left hand." A lipreading drill followed requiring the student viewer to turn the projector on with a designated hand.

Key Word Count: Frequency of Use in Narration

Hand	20	On	9
Turn	14	Show	8
Left	13	Off	6
Right	10		

Comment: The children were not prepared for this film test. No format previously used followed this plan. The children had been taught to lipread "left" and "right" and also "on" and "off." The film was an attempt to discover if the students were able to transfer previous learning to a new situation. Most of the students were baffled when the projector went off. Several left the booth assuming the lesson was over. A few followed the lipreading instructions and had a perfect response. The autostop feature offers a variety of applications to this method of teaching.

FILM SERIES TWO

Number of Viewings and Evaluations

	Film Cartridges											
Case Studies	14		15		16		17		18		19	
	V	E	V	E	V	E	V	E	V	E	V	E
I	8	4	12	7	8	5	7	4	2	2	1	1
II	7	4	10	4	9	4	12	6	2	2	1	1
IV	8	3	8	4	6	3	7	4	2	2	1	1
V	3	2	2	1	3	3	2	2	2	2	1	1
VI	8	3	6	2	7	4	7	3	2	2	1	1
VII	6	4	6	3	7	4	8	3	2	2	1	1
VIII	3	3	4	2	4	3	3	3	2	2	1	1
IX	8	4	7	4	7	4	8	3	2	2	1	1
X	4	3	3	2	4	4	1	1	2	1	1	1
XI	4	4	3	2	3	2	3	3				

V - Total Number of Viewings
E - Number of Evaluations

Appendix A

Series Three: Multiple-Word Approach

The films in this series were planned to provide practice for the student to lipread words identifying breakfast, lunch, and dinner foods. A film was prepared to teach the selected vocabulary for each meal. The approach used in this series was the teaching of a group of words rather than the placing of emphasis on a single word as in the first series or on associated words as in the second series. The instructional scene was a table setting, with camera photographing the lesson from the learner's "place at the table." The film teacher proceeded to fill the learner's plate and talked about the food items in a manner similar to normal table conversation. After these three presentation films, a review was produced using a cafeteria theme. The film teachers passed by the counter and selected the same foods as previously taught, but in a different food arrangement for their meal.

The response film on this series was a form of a pencil and paper test. A foods test booklet, following the multiple-choice format, was created by using full color photographs of the items. Each page of the booklet had four pictures of the identical foods photographed in the films. There were twenty-one pages in the booklet. The first fourteen, each of the four pictures per page, contained only one food item. The last seven pages, each picture had two food items per frame. These paired items were logical combinations, such as ice cream and cookies, hamburger and ketchup, etc. The film teacher dictated the words to the student, instructed him to draw around the correct answer, and told him when to turn the page to the next item. The child in the booth, if he could lipread the material, took his own test.

Film Cartridge #20

Description: This film was the first of the multiple-word series designed to teach a vocabulary relating to foods. Foods from a typical breakfast menu are selected and served by the film teacher. This was presented as though the food items were being served to the viewing child. The film teacher was the imaginary hostess, and gave the children an opportunity to lipread her conversation as she prepared the learner's meal. The unit-film teacher was a different person from the teacher who conducted the lessons in the first two series. The film was 9 minutes and 10 seconds in length, and requested no overt responses from the viewer.

Key Word Count: Frequency of Use in Narration

Here	28	Butter	21	Pepper	7
Jam	25	Cereal	17	Salt	6
Milk	25	Put	20	Pour	6
Eggs	24	Sugar	12	Plate	7
Toast	23	Orange Juice	11	Knife	4

Comment: The composite viewing record showed the interest level grouped at the "intent" interest rating with occasional drops to "prolonged" interest. Only one subject dropped to "general" interest and he was the subject who was added to the project in the fall. Five subjects showed no distraction at all in their composite rating.

These high ratings occurred in the fall after a lapse of nearly four months since any films had been viewed. The interest in the project had remained high and the complexity of the films served to hold the attention of the subjects. Use of a different film teacher may have served to heighten the interest also.

Film Cartridge #21

Description: Cartridge #21 was the second of the multiple-word series and presented names of foods often served for lunch. The film teacher selected a luncheon menu for the viewing child and verbally identified each food item as she placed the food on the learner's plate. The same instructional setting, the illusion of the film teacher and learner seated at the same table, was also used in this film. The film was 6 minutes and 12 seconds in length and required no overt responses from the viewer.

Key Word Count: Frequency of Use in Narration

Put	23	Milk	13	Mustard	9
Here	18	Carrot Sticks	10	Ketchup	8
Cookies	17	Potato Chips	10	Hot Dog	4
Hamburger	13	Jello	10	Pour	2
Pickles	14				

Comment: The composite viewing record showed that four of the ten children who studied this film maintained an interest level at the "intent" rating throughout the viewings. Two of the children dropped to "general" interest for brief periods, the remainder not dropping below "prolonged" interest. The overall rating was slightly lower than that recorded for the breakfast film but was still highly satisfactory.

The children sometimes reacted by expressing their likes and dislikes of certain foods by sniffing, extending their hands toward the screen, nodding, or shaking their heads in rejection. They seemed to feel that this luncheon was prepared for them.

The final selection of foods resulted in an attractive service which appeared quite appetizing.

Film Cartridge #22

Description: Cartridge #22, a 6-minute and 47-second film, was designed to teach vocabulary relating to foods frequently served at dinner. The film teacher was the hostess and pretended to serve foods to the viewing child. The instructional setting was the same as film lessons #20 and #21.

Appendix A

Key Word Count: Frequency of Use in Narration

Here	25	Peas	13	Meat	8
Butter	17	Ice Cream	11	Salt	8
Potatoes	15	Salad	10	Pour	2
Milk	14	Bread	10	Away	6
Pepper	13	Cake	9		

Comment: Five of the subjects maintained their interest at the "intent" level, with no drops. Only one subject dropped to "occasional" interest on the composite viewing record. Although this was the third film dealing with foods, it held the children's interest as well as the previous ones.

Film Cartridge #23

Description: Cartridge #23 was a review of the foods vocabulary which was presented in the first three films of the multiple-word series. This film was more complex in that two film teachers were presented. A cafeteria setting was used, with each teacher selecting a dinner and offering comments planned to review the vocabulary presented previously. This was the longest film of the entire series and was 12 minutes and 12 seconds in length.

Key Word Count: Frequency of Use in Narration

Milk	13	Orange Juice	6	Hamburger	3
Plate	11	Butter	5	Pour	3
Jam	7	Fork	5	Ketchup	3
Ice Cream	7	Pickles	4	Salt	4
Spoon	7	Toast	4	Pepper	2
Meat	8	Knife	4	Get	2
Salad	6	Cookies	4	Cake	2
Potatoes	6	Potato Chips	3	Carrot Sticks	2
Cereal	6	Hot Dog	3	Bread	3
Peas	5	Jello	3		

Appendix A

Comment: Despite the length of this film the interest span was quite satisfactory, with seven subjects viewing at the "intent" level throughout. The other three subjects dropped no lower than the "general" interest level. The use of two film teachers in addition to a new manner of presentation probably were factors in maintaining a satisfactory interest level.

Film Cartridge #24

Description: Cartridge #24, was 5 minutes and 53 seconds in length. The film teacher who had presented the foods vocabulary unit also gave the test. This unit film test over the foods vocabulary required the viewer to select the correct picture from four full color food photographs on each page. The child indicated his understanding by lipreading the word and drawing around the proper food item. Each word was repeated twice. The film teacher instructed the child to turn the page and the test proceeded. Twenty-one responses comprised the test, fourteen single-word responses and seven paired-word (two food items per picture) responses.

Key Word Count: Frequency of Use in Narration

Potatoes	6	Ice Cream	4	Butter	2
Get	5	Bread	3	Pepper	2
Peas	5	Orange Juice	2	Cake	2
Cereal	4	Meat	3	Salad	2
Salt	4	Hamburger	2	Eggs	2
Milk	4	Hot Dog	2	Toast	2
Cookies	4	Mustard	2	Jam	2

Appendix A

Comment: The more capable lipreaders were able to score highly on this test, but the less experienced children needed more time to watch the lips, then discriminate among the four illustrations. On the last seven responses in this film test, several children marked the page prematurely after seeing only the first word of the two given.

The process of taking the test, turning the pages, drawing around an item, and receiving these instructions by lipreading was not a problem.

Film Cartridge #25

Description: Cartridge #25 was a test designed to measure lipreading ability acquired through study of cartridges #20 - #23 of the foods series. The length was 6 minutes and 57 seconds. The film teacher who taught the units in series one and two conducted this final test. The same pictorial test booklet as in film #24 was used, but the test vocabulary was presented in a different sequence. The same number of single words and paired words was given in both versions.

Key Word Count: Frequency of Use in Narration

Ketchup	4	Orange Juice	2	Carrot Sticks	2
Meat	4	Salad	2	Potatoes	2
Cake	4	Butter	2	Cereal	2
Cookies	4	Milk	2	Eggs	2
Ice Cream	4	Take	2	Toast	2
Potato Chips	4	Hot Dog	2	Jam	2
Jello	4	Hamburger	2		
Bread	4	Mustard	2		

Comment: Although lipreading a different teacher from the one who taught the unit, the children responded nearly the same for both film tests. The pace of the film did not allow enough time for the slow reader and the paired items caused difficulty.

FILM SERIES THREE

Number of Viewings and Evaluations

	Film Cartridges											
Case Studies	20		21		22		23		24		25	
	V	E	V	E	V	E	V	E	V	E	V	E
I	8	7	7	5	7	5	4	4	2	2	1	1
II	7	7	6	5	5	4	4	4	2	2	1	1
IV	6	6	5	5	4	4	3	3	2	2	1	1
V	5	5	5	5	5	5	3	3	2	2	1	1
VI	8	8	8	6	7	6	4	4	2	2	1	1
VII	5	5	5	5	4	4	4	4	2	2	1	1
VIII	5	5	5	5	5	5	3	3	2	2	1	1
IX	10	10	10	7	7	6	5	5	2	2	1	1
X	5	5	5	5	5	5	4	4	2	2	1	1
XII	9	9	9	7	6	5	5	5	2	2	1	1

V - Total Number of Viewings
E - Number of Evaluations

Appendix A

Section 3.

Case Study	Age	Classification	Onset	Ability	Page
I	5-3	SD	CD	AA	132
II	5-4	HH	CD	AA	143
III	5-10	PD	AD	AA	152
IV	5-11	SD	AD	AA	157
V	6-11	PD	CD	A	167
VI	7-4	SD	CD	AA	175
VII	7-5	PD	CD	LA	185
VIII	7-6	SD	AD	S	195
IX	7-8	PD	CD	A	203
X	8-4	PD	AD	S	214
XI	10-5	HH	CD	LA	224
XII	6-7	PD	AD	A	231

Classification Code

HH - Hard-of-hearing	(35-60 db. Loss)
SH - Severely Hard-of-hearing	(60-80 db. Loss)
SD - Severely Deaf	(80-95 db. Loss)
PD - Profoundly Deaf	(95 db. - No Response)

Onset Code

CD - Congenitally Deaf
AD - Adventitiously Deaf

Ability Code (Compared with other deaf children)

LA - Low Average
A - Average
AA - Above Average
S - Superior

Appendix A

Section 3. Case Studies

Since the intent of the feasibility study was to observe and analyze the reactions of deaf children to viewing the lipreading films in a laboratory setting, documentary evidence was compiled on each student. The format of the case studies was planned to give the reader enough information about the resultant behavior of each child so that he could compare the experimental population with other deaf children who have similar characteristics. Each description contains information about chronological age, school achievement level, reading level, mental ability and an audiogram. The text of each study provides a personal assessment of the child, an indication of his interests, and a statement of his television viewing habits.

The results of the film-viewing were reported in three parts: single-word approach, associated-word approach and multiple-word approach. Each series had an end-of-unit film test and a post test as a means of comparison and a measure of progress. The laboratory phase began the second semester of the school year 1963-1964 and continued into the first semester 1964-1965. The post tests for the first two series were given in the fall after the summer vacation. The third film series did not begin until the third week in September. The project terminated December 31, 1964.

Appendix A

An evaluation profile of the student's viewing habits and reactions to the films was compiled by periodic undetected observation. The profile was drawn on a double grid graph which indicated both viewing interest and response rate. The left hand scale reflecting attentiveness was drawn on the graph over a white background. The right hand scale reflecting correctness and rate of response was plotted over a gray background. This graphic interpretation of data enables the reader to note a continuum of student reaction in both observing and responding to the lipreading films.

Each case study contains the following statistical information:

(a) Profile of initial and best viewing reactions to the first film in each series, enabling a comparison of change in viewing habits as the study progressed.

(b) Profile of initial and best viewing reactions to each of the films in Series Two, since each film used a different format.

(c) Profile of composite viewing habits with presentation and review films in Series One and Series Three which employed this technique.

(d) Profile of response film tests in each of the three series.

A complete table of response patterns has been compiled and placed at the conclusion of the case studies.

Chronological Age: 5-3

CASE STUDY I

School Achievement Level: K

Reading Level: Readiness

Audiogram May 1964

	250	500	1000	2000	4000
Right ear	70	90	85	95	90
Left ear	75	85	85	95	90

Rather marked bilateral nerve deafness.

* * * * * *

This subject is an appealing girl of five. The cause of her hearing loss is unknown. Her exact threshold of hearing cannot be obtained. She shows fairly persistent responses to pure tone stimuli at or near the limits of the audiometer for frequencies of 250, 500, 1000.

She has a ready smile and outgoing manner and seems to enjoy the school environment. She is friendly with the other children. Her mother feels that she may be withdrawing slightly, as recently she seems to prefer playing alone or with only one or two others.

Her favorite type of play is building or active play. She does not like to sit and color or write too long. She only watches television when tired or bored and averages no more than one-half hour a day.

The Nebraska Test of Learning Ability indicates that she is well above average in ability compared with other deaf children. She excels in the areas of memory and retention.

Her teacher reports that she has some usable hearing and is making good progress on sounds. She has some voluntary speech. She is doing "readiness" work in reading and her school achievement level is kindergarten. She has only attended the public school for six months, but had three years of occasional training at the University of Nebraska Speech and Hearing Clinic.

In viewing the project films she was easily distracted by her new surroundings the first few times. She soon became accustomed to the situation and was quite attentive at later viewings. She verbalized some and might have spoken more frequently but she sucked two fingers throughout viewing time. She looked at teacher's lips a great deal. She occasionally adjusted volume.

The composite evaluation record of the single word vocabulary emphasis films shows some distraction on cartridge #2, which reflects her initial reaction to the unfamiliar situation. The remaining single word studies held her interest at the prolonged to intent interest level.

The response record suggests that she had gained in lipreading by the time cartridge #11 was shown, as there were 12 times when

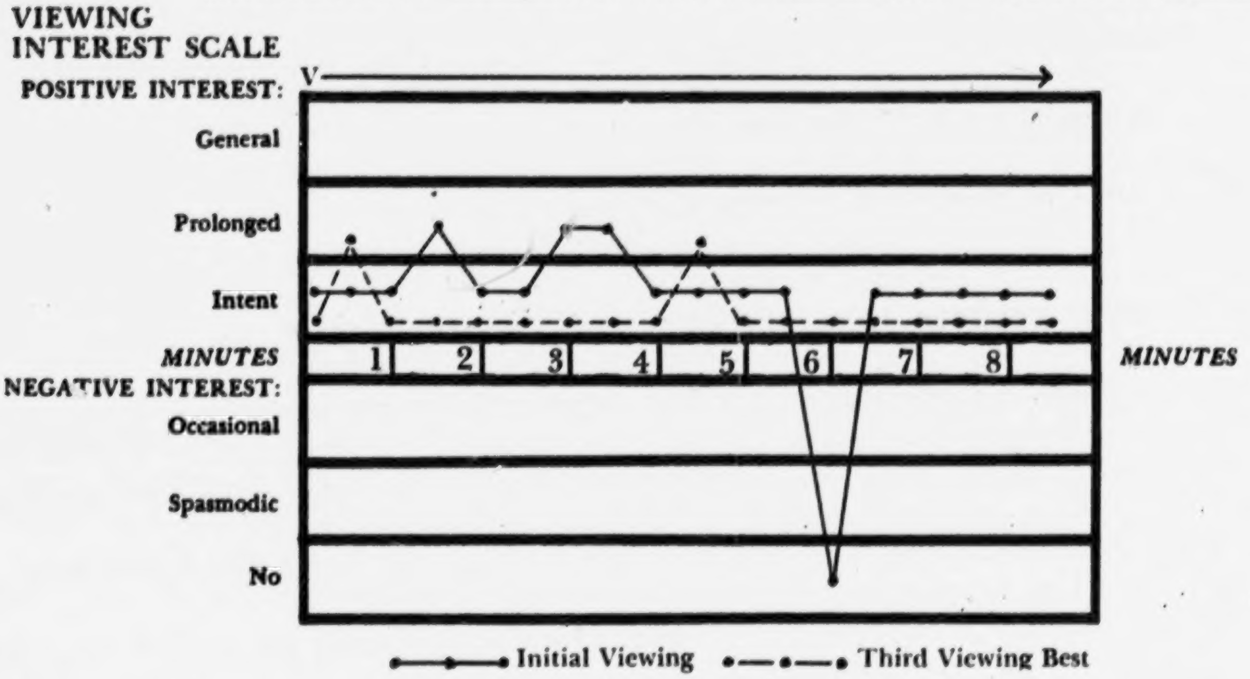
Case Study I

EVALUATION PROFILE

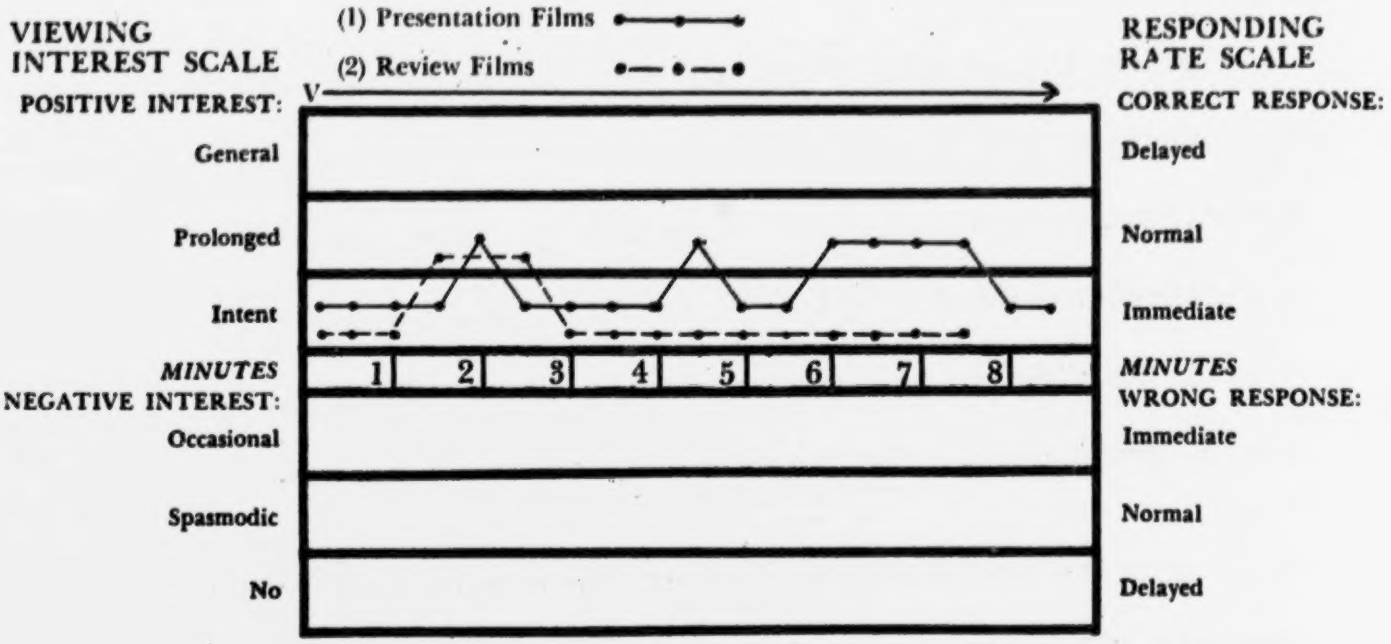
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO 2 NO. VIEWINGS 10 NO. EVALUATIONS 6



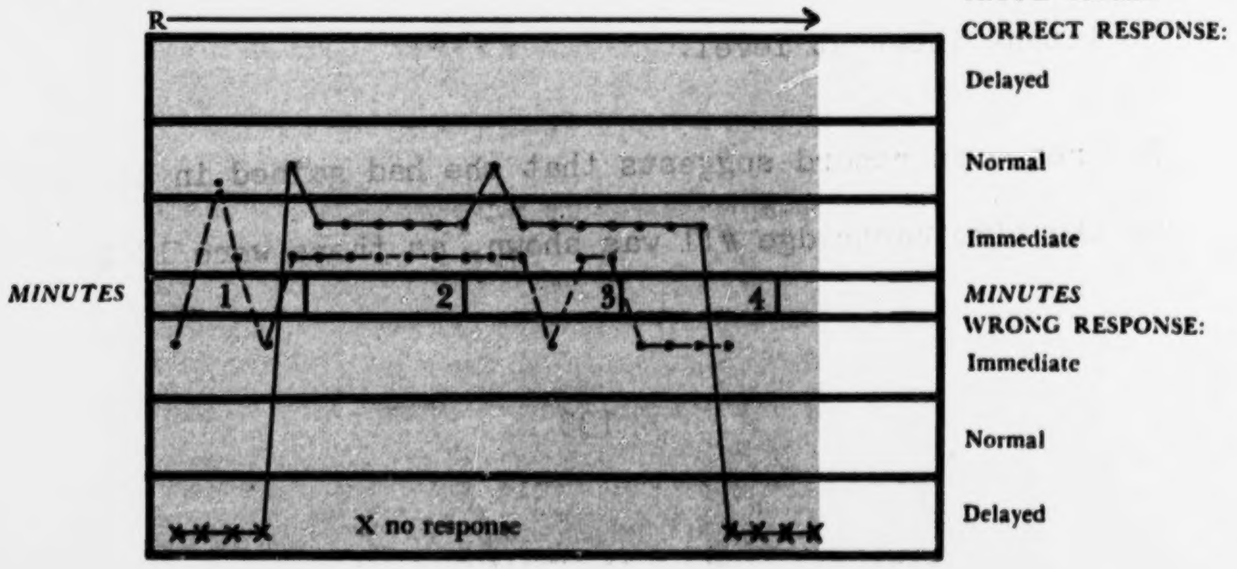
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher

Cartridge No. 13 Different Film Teacher



she made no response when being tested on cartridges #5 and #8, but she responded to every request on test film #11, though this required her to lipread all four of the words "car-ball-doll-tractor." Sometimes her failure to respond was due to lack of attention to the previous films.

Perhaps by the time the test film was presented she had gained in understanding of what was expected. It should be kept in mind that she is only 5 years, 3 months of age, the youngest subject studied.

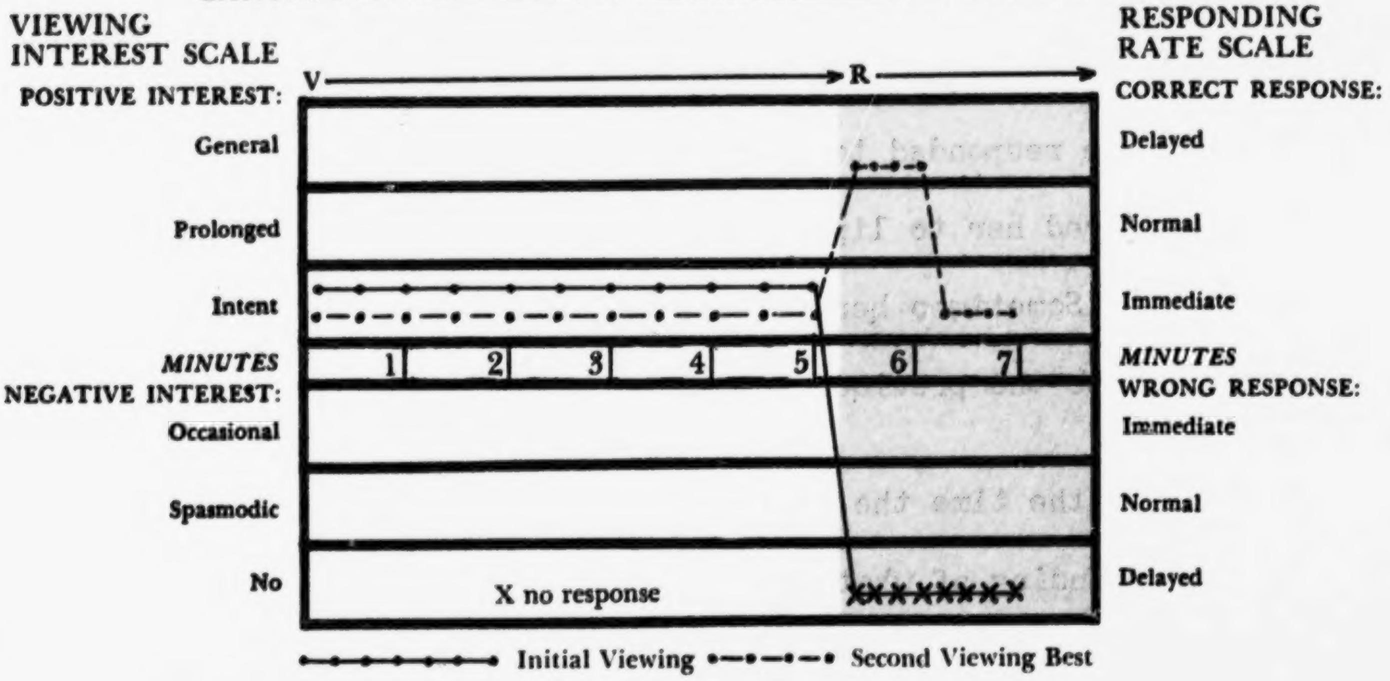
By tabulating the 3 response films, single word approach, it is shown that the subject did make 75 correct responses compared to 4 that were incorrect and 12 "no responses." There were 67 of these in the normal to immediate time range. Therefore, Case Study I was correct in her responses 82% of the time. This placed her well below the other subjects who all ranked over 90%. However, besides being the youngest subject, she has a very profound hearing loss.

For the end of unit film #12, which provided no cueing, depending completely on lipreading ability, she was able to designate objects but could not understand instructions to put away objects. She made 15 correct responses out of a possible 23, or 65%. When the same film was repeated in the fall, she retained her rating of 65% accuracy, again making most of her errors in placement of

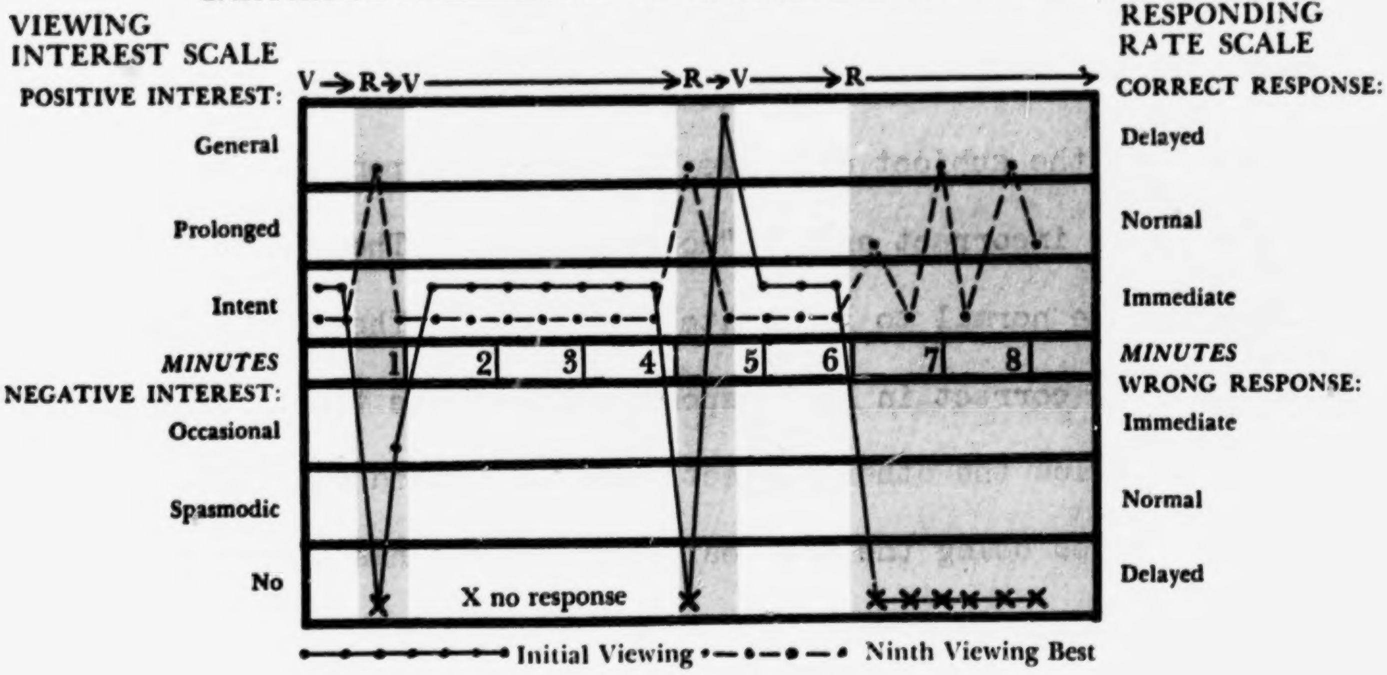
Case Study I
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

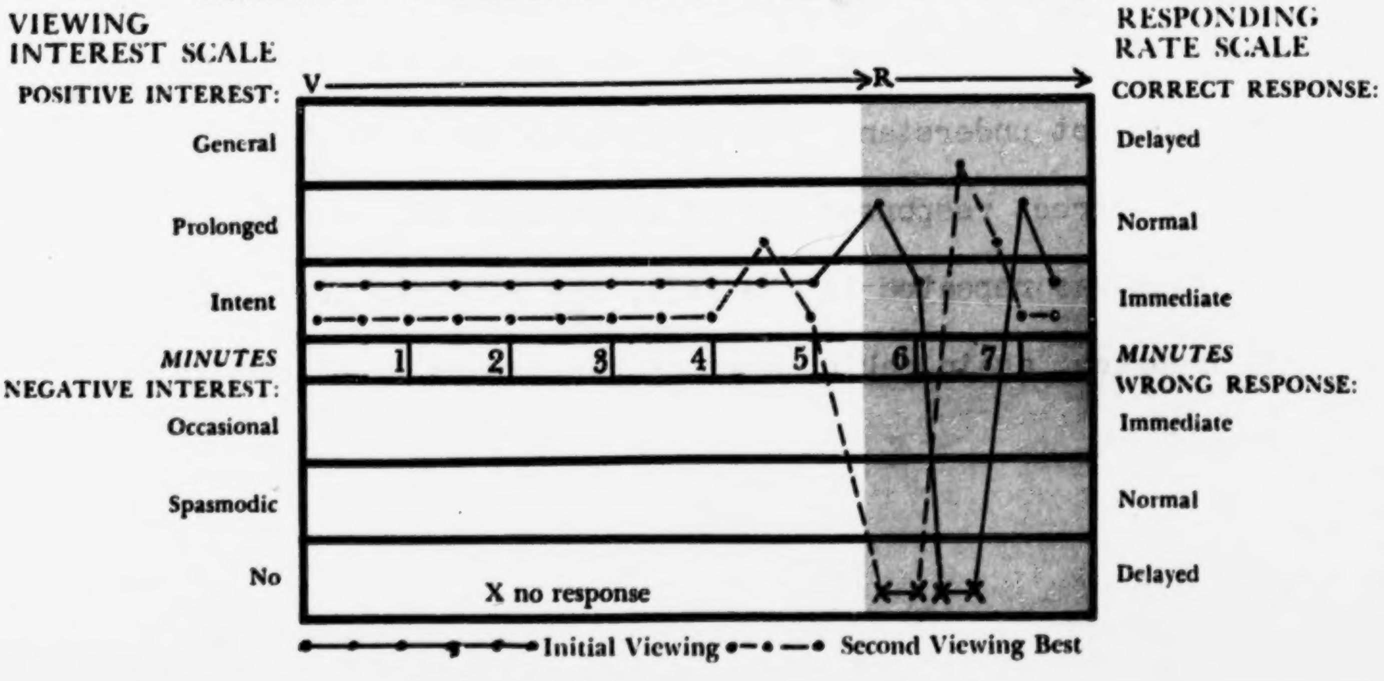
CARTRIDGE NO. 14 NO. VIEWINGS 8 NO. EVALUATIONS 4



CARTRIDGE NO. 15 NO. VIEWINGS 12 NO. EVALUATIONS 7



CARTRIDGE NO. 16 NO. VIEWINGS 8 NO. EVALUATIONS 5



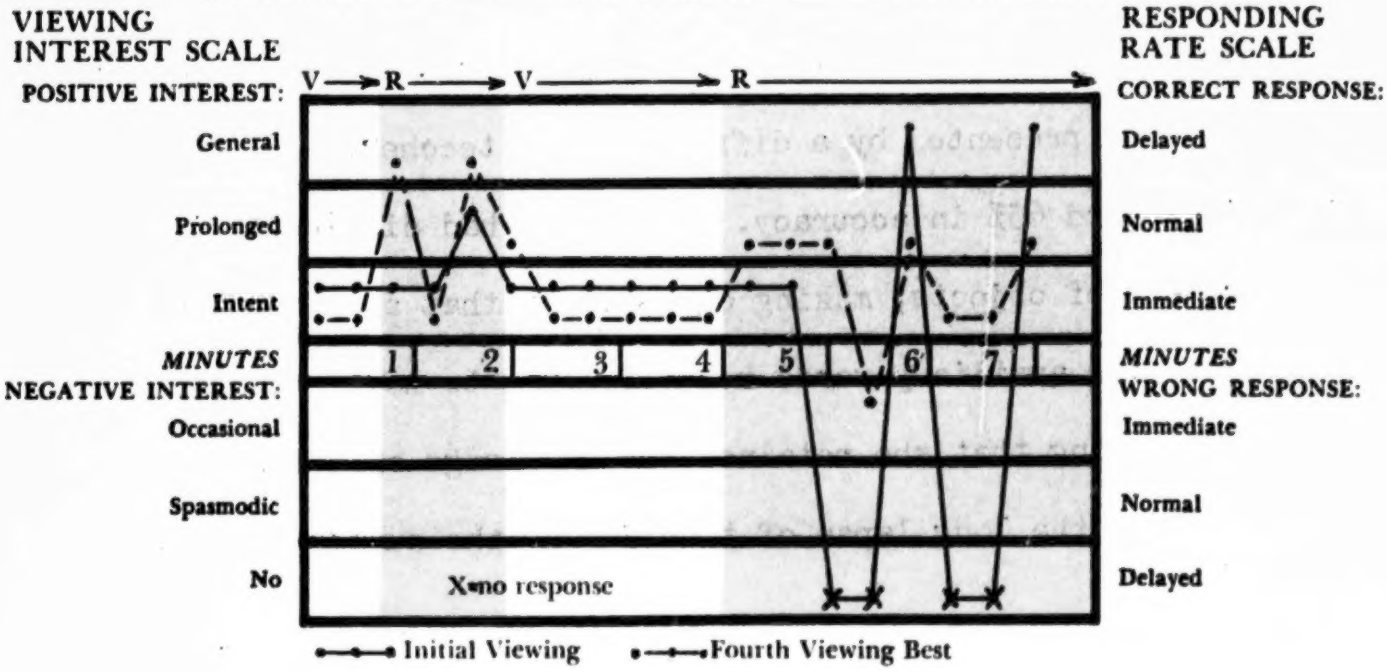
objects. When tested with cartridge #13, single word approach, no cueing, presented by a different film teacher, this child again scored 65% in accuracy. She again had difficulty in placement of objects, making one suspect that she could not lipread the auxiliary words requiring her to move objects. It is gratifying that she retained her knowledge of the words learned throughout the long lapse of time during the summer months.

When viewing the associated word approach films on the left and right concept, #14-17, she failed to respond in many instances. She began to improve after viewing the second film of the series. Her overall accuracy rating was 50%, lowest of the entire group. This was due to the fact that she did not respond 88 times out of 180. When she did respond she was usually correct, as only 2 errors were made. The observer believes that some of the auxiliary words in the directions were too difficult for her level of ability. Though a microphone was used, she gave no indication of hearing her own voice.

This child, having a poor record of response on the training films of the left-right series, made a surprising record on test film #18, raising her accuracy rating to 71%. This was a 21% increase, greatest gain made within the group. Apparently she had learned to lipread "left" and "right." She had gained some understanding of the concept through repeated exposure to the films. This

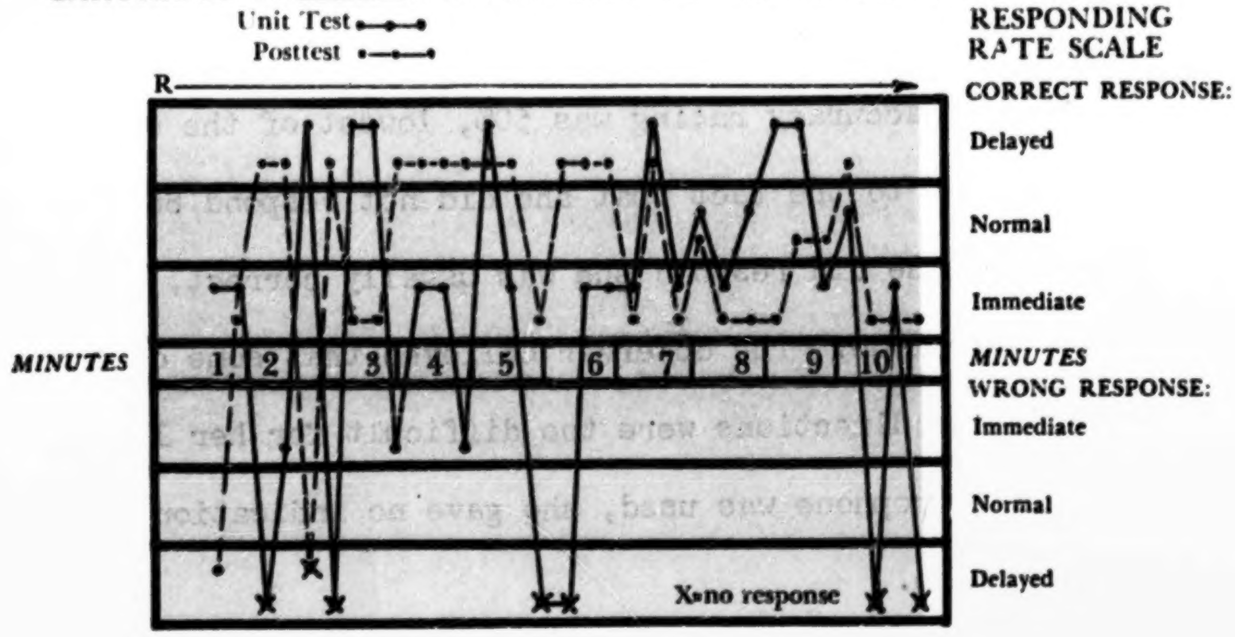
Case Study I
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO 17 NO. VIEWINGS 7 NO. EVALUATIONS 4



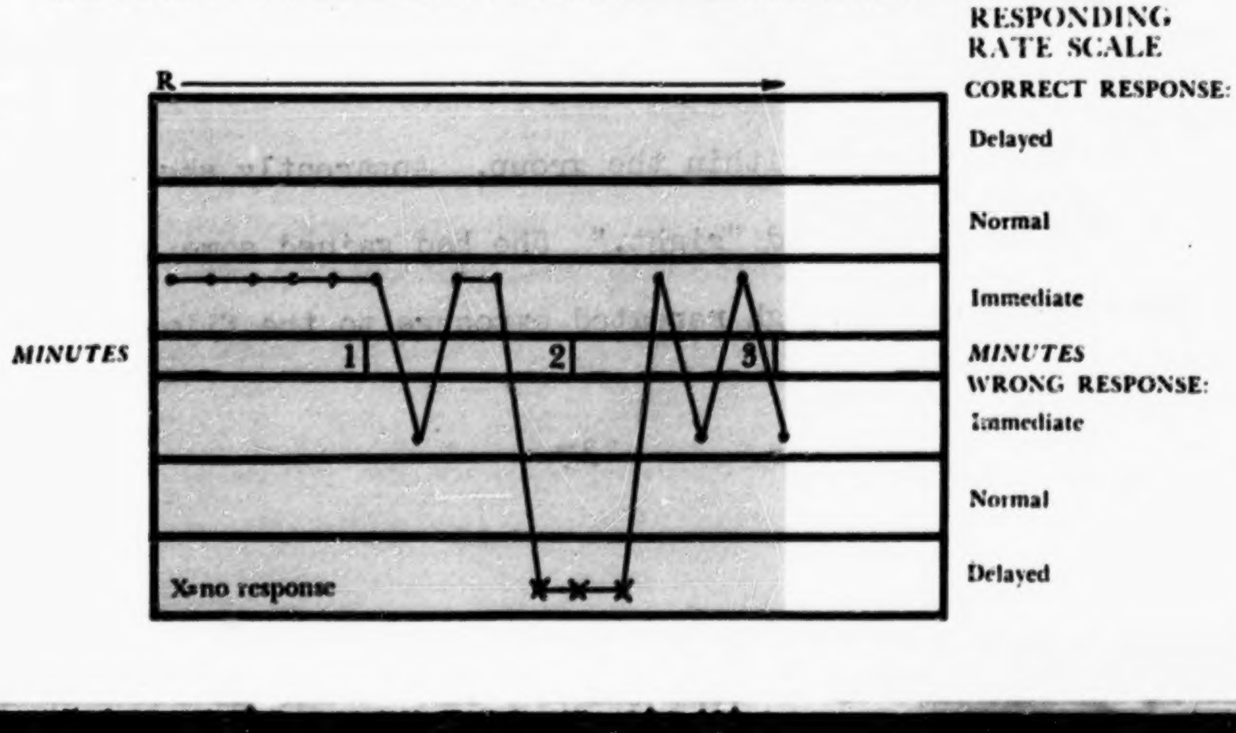
Test Films

CARTRIDGE NO 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



fact seems to indicate that although this abstract concept was almost beyond her present ability, repeated showings of the films made it possible for her to learn even this difficult material. While her score is the lowest, considering her age and level of comprehension her gains are the greatest and most gratifying.

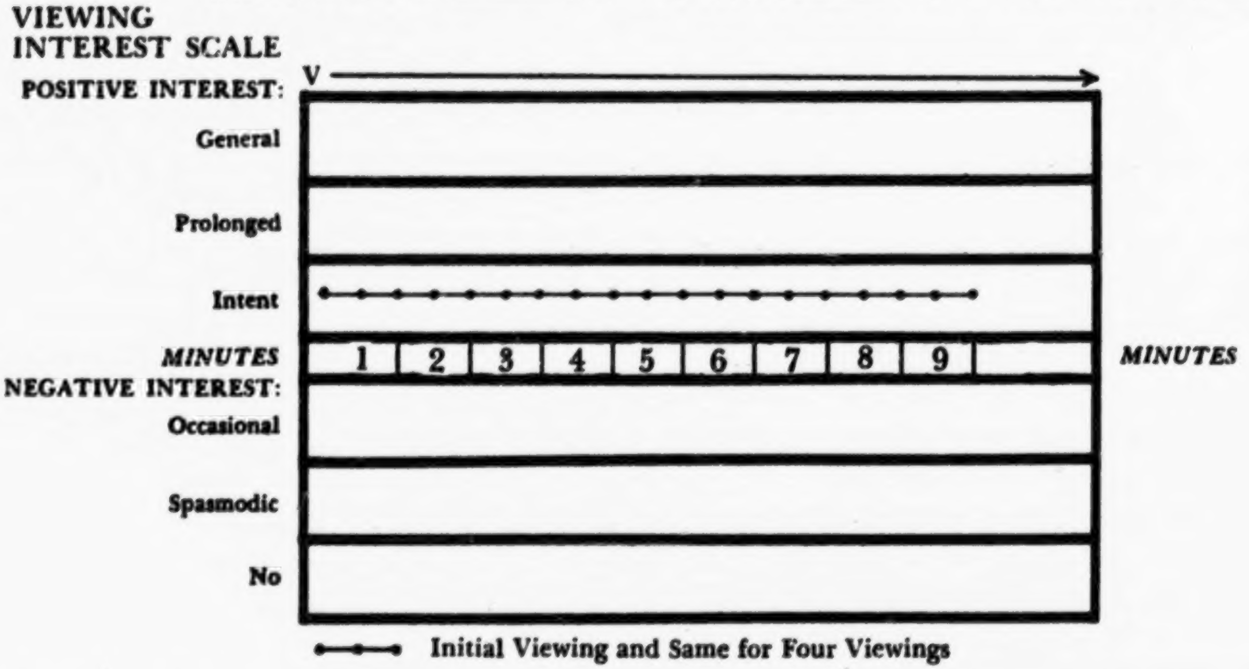
When test film #18 was given four months later, she rated 94% in accuracy, fourth highest of the entire group; however, many of these responses were delayed and she gained cues from watching the film child. For this reason there is little cause to believe she had made further gains in knowledge over the summer. Nevertheless, she only missed 1 of 9 responses in cartridge #19, and on this one verbalized the correct word. Therefore, the observer believes that this child retained her lipreading ability and her knowledge of the concept of left and right over the period studied. Test film #19, which not only checked on the student's ability to lipread the words "left" and "right" but also the words "on" and "off" in regard to operating the projector, was too complicated for her present level of ability. When the machine shut off, she was confused and left the booth four times, returning when so directed by the room teacher. For this reason her rating was only 62% on this test.

On the multiple word approach food series, this child's interest remained at the prolonged to intent interest level, even though

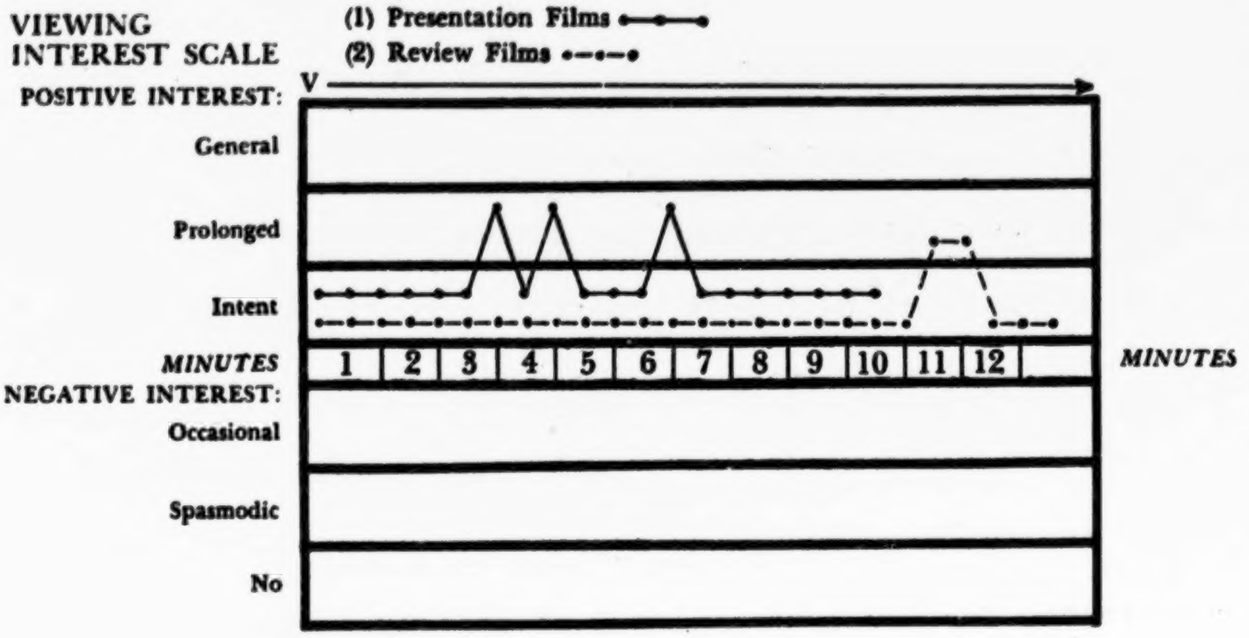
Case Study I
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 8 NO. EVALUATIONS 7

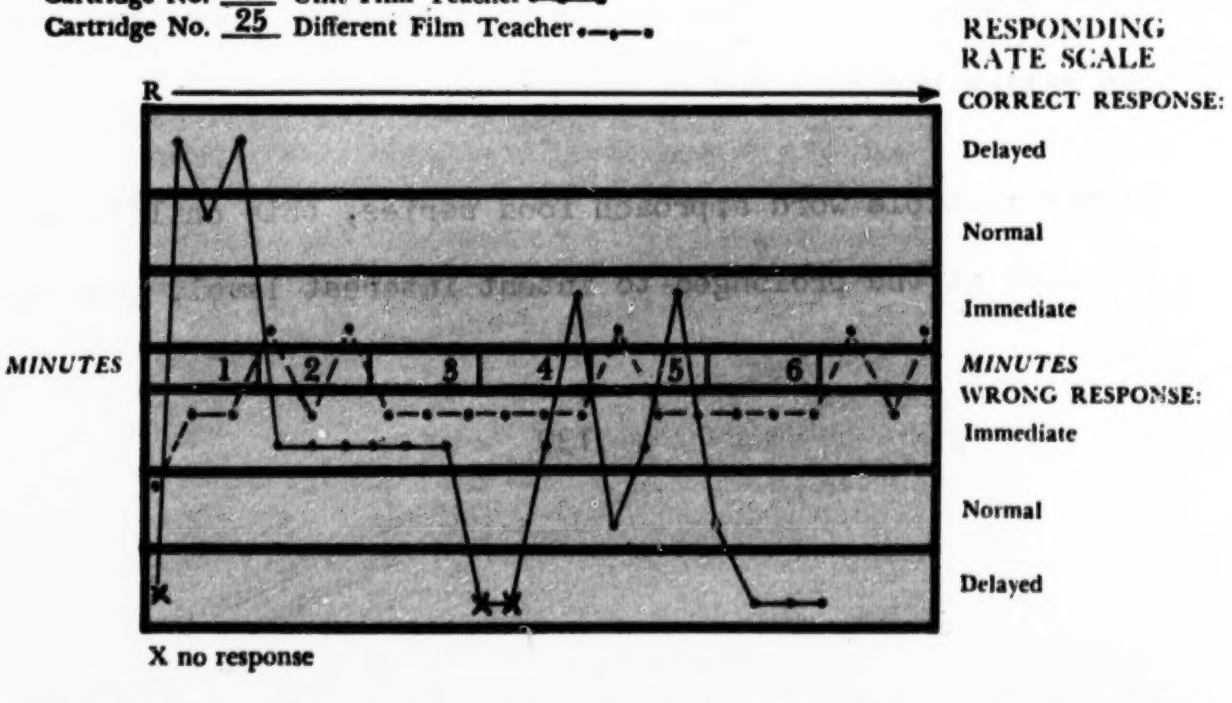


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher
Cartridge No. 25 Different Film Teacher



CASE STUDY II

Chronological Age: 5-4
School Achievement Level: K
Reading Level: Readiness

Audiogram May 1964

	250	500	1000	2000
Right ear	10	25	40	100
Left ear	15	25	50	N.R.

* * * * * *

This little girl of 5 years was an RH baby. Her blood was not changed immediately and she had four transfusions. She has a slight touch of palsy and may have some brain damage. It is questionable how much of her handicap is due to this factor or due to a hearing loss. Her hearing loss is mainly at the high frequency levels and she does not always respond to speech adequately at levels at which she can hear.

She is determined and strong-minded but enjoys the company of other children and adults. She likes school and is eager to please her teacher and is interested in the other children.

She likes both active and quiet play. She enjoys music and wants to learn to play the piano. Her television viewing would average about one hour or less a day. Certain programs interest her, one of which is organ music.

PRECEDING PAGES MISSING

PRECEDING PAGES MISSING

Case Study II (continued)

Rating consistently above her age level in the Nebraska Test of Learning Ability, she showed a good degree of insight, memory, and problem-solving ability. Coordination and fine control of fingers was a little less than average but this has been largely overcome during the year.

Her school achievement level is kindergarten and she is at the "readiness" level in reading. She has been in school six months. Her speech has many inaccuracies, but she has the language ability to express herself.

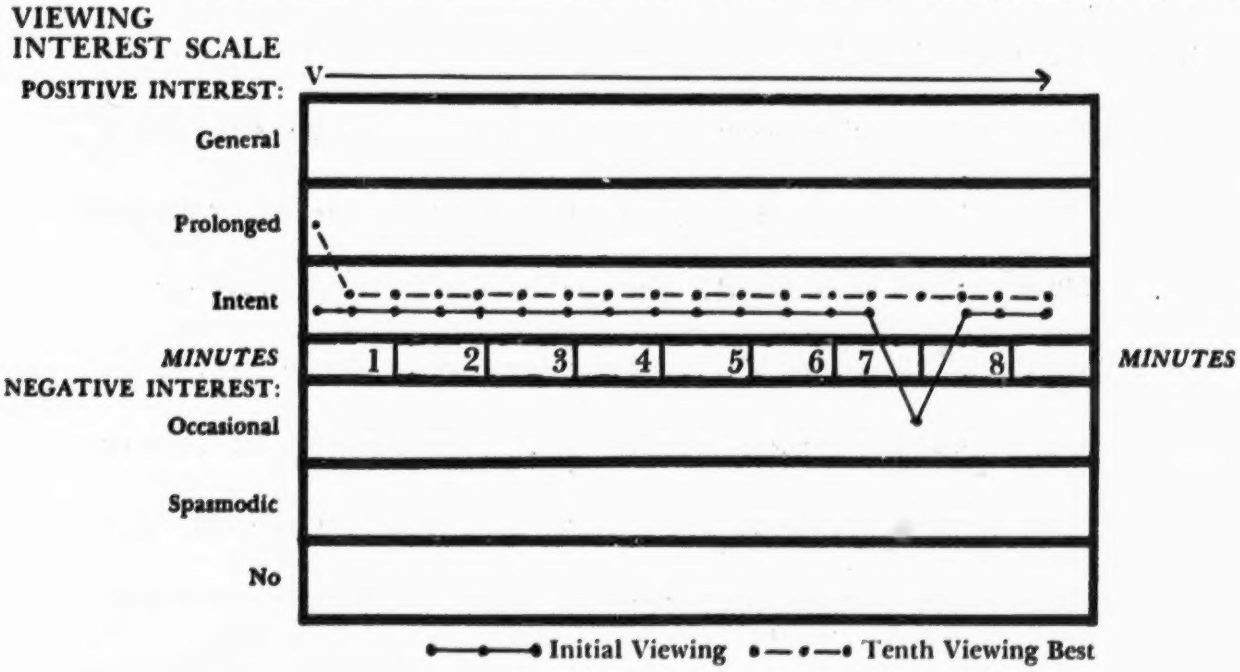
From the beginning, the film project has fascinated her. She often asked to see the films. Perhaps the fact that she has more hearing than some of the other children contributes to this increased enjoyment. She is a good lipreader, however. In viewing response film #11 without sound she responded perfectly. She watched teacher's lips closely. She verbalized frequently during viewings and smiled and clapped.

This subject's composite record of the four presentation cartridges using the single word emphasis approach was a straight line at the intent interest level except for a drop showing slight distraction occurring at one point during the first viewing, interest at all other times being maintained at the highest level. Her curiosity and fascination with the films were so great that even the mirrors did not distract her as they did many of the subjects at the start of the project.

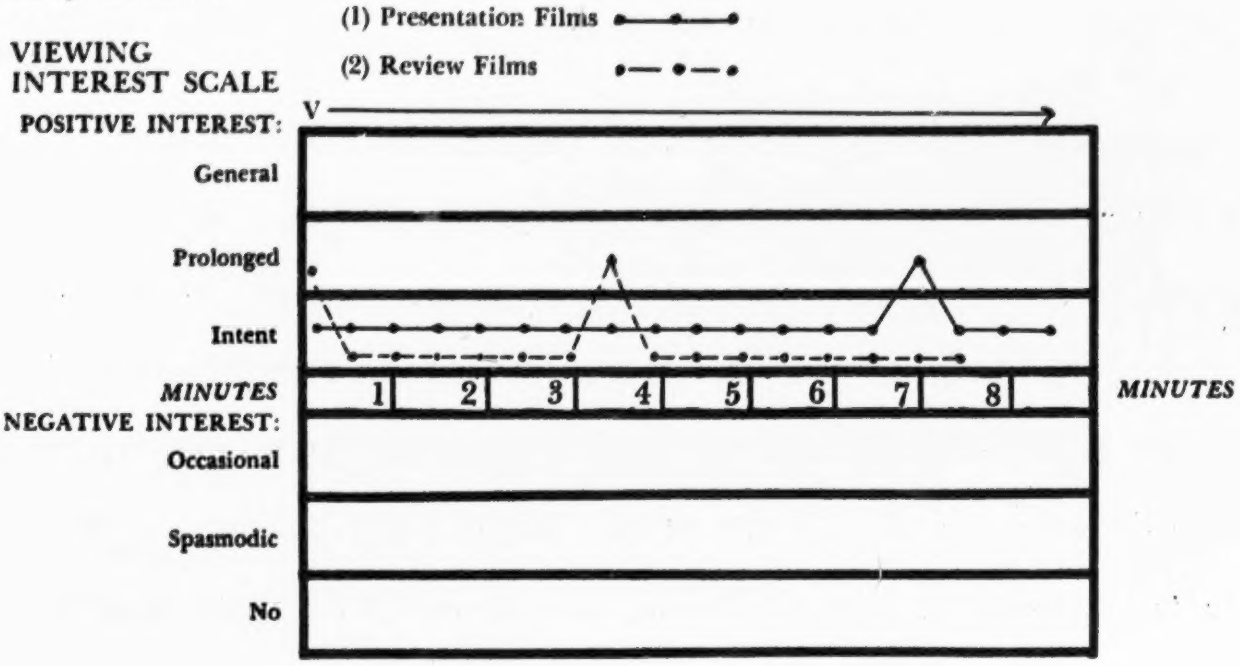
Case Study II
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 11 NO. EVALUATIONS 5



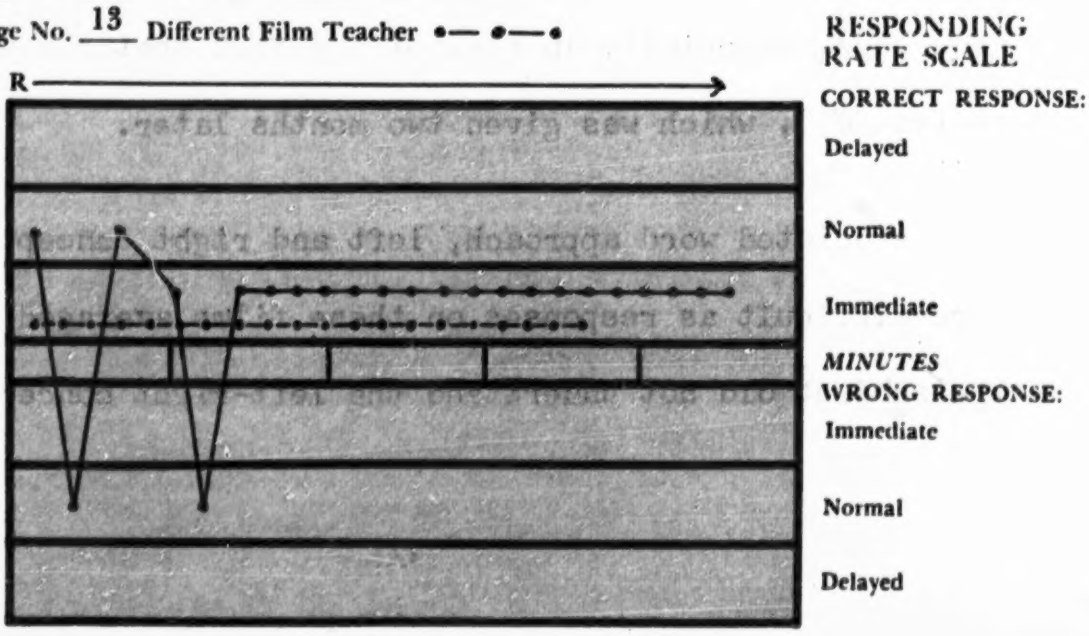
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher ●—●—●

Cartridge No. 13 Different Film Teacher ●— ●—●



Case Study II (continued)

When tested on the single word emphasis approach the subject scored 95% correct responses. (She is the next to the youngest subject.) When sound was used, she probably gained cues or perhaps understood the question; however, when no sound was given she could still respond perfectly. She seemed to use her hearing to the best advantage possible, yet could rely on lipreading ability alone when necessary. When the headsets were turned off she asked for sound, but when it was not forthcoming, she watched teacher's lips intently and lipread very well.

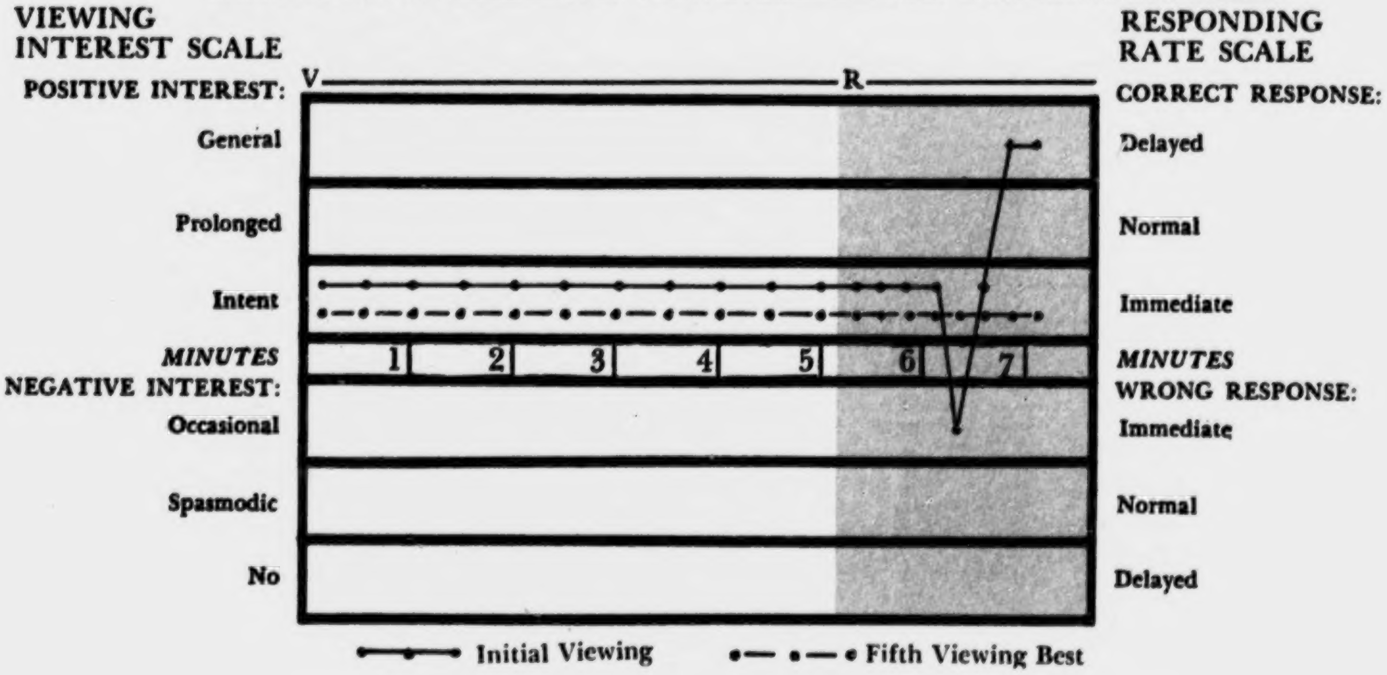
On the test of single word films, no cueing, #12, her responses were accurate except at the beginning of the film when she was confused as to directions for placing objects. She replaced them all correctly at the end of the film. She lipread the words well but might have been confused by the auxiliary words in the directions at the start of the film. She was 83% accurate. On retesting after a five-month lapse, she scored 87%. This increase was probably due to the fact that this time she did not become confused at start. It appears evident that she had retained her knowledge, especially in view of the fact that she was 100% accurate on test #13, which was given two months later.

The associated word approach, left and right concept, was slightly more difficult as responses on these films averaged 86% correct. The subject did not understand the left-right concept at the start

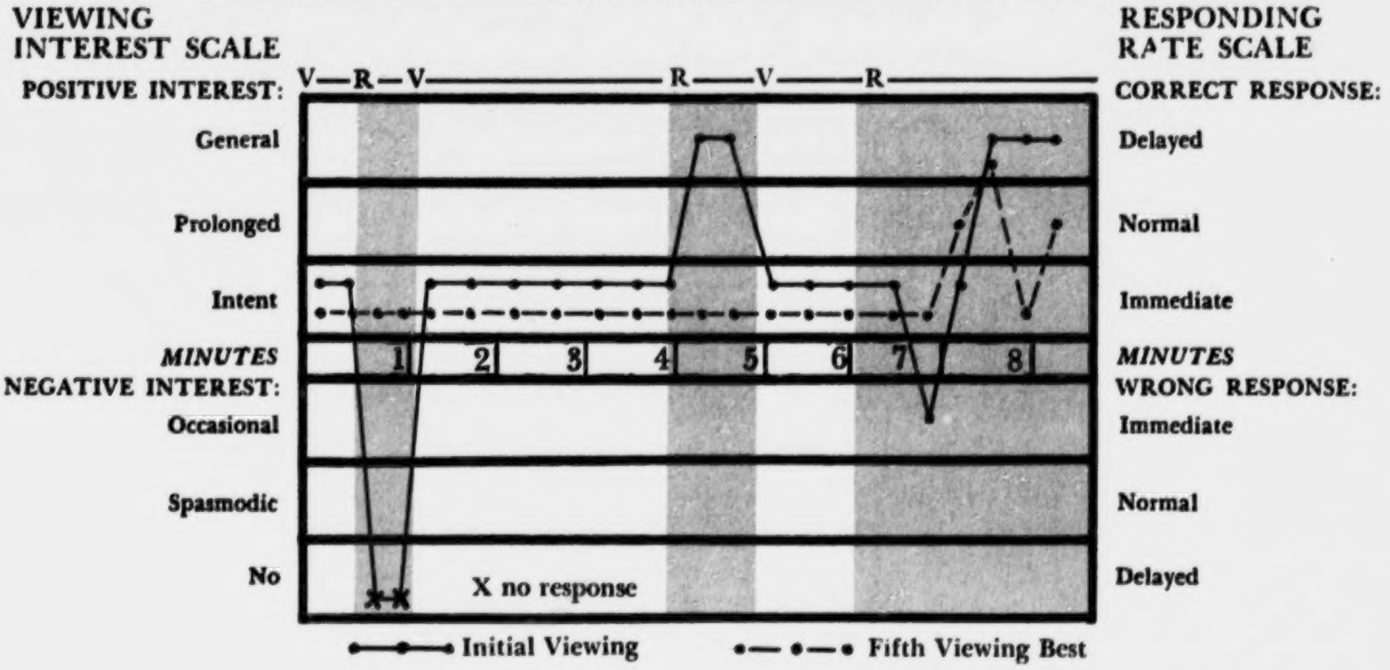
Case Study II
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

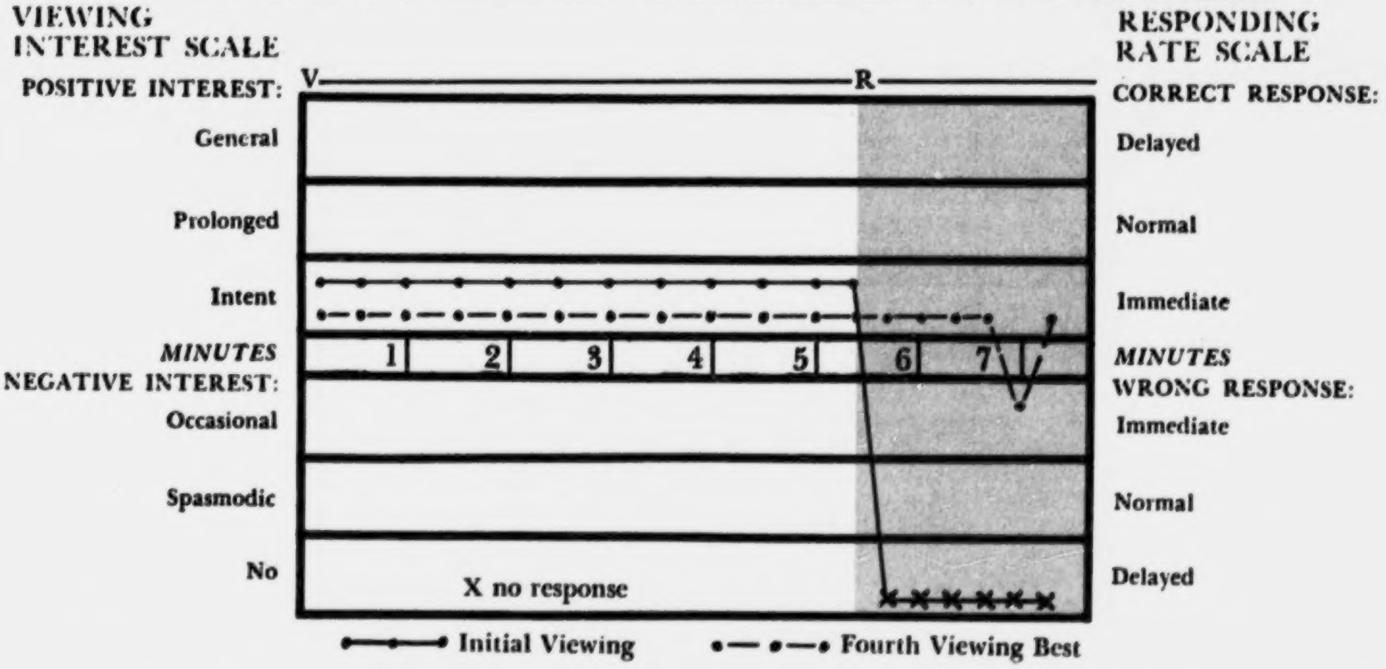
CARTRIDGE NO. 14 NO. VIEWINGS 7 NO. EVALUATIONS 4



CARTRIDGE NO. 15 NO. VIEWINGS 10 NO. EVALUATIONS 2

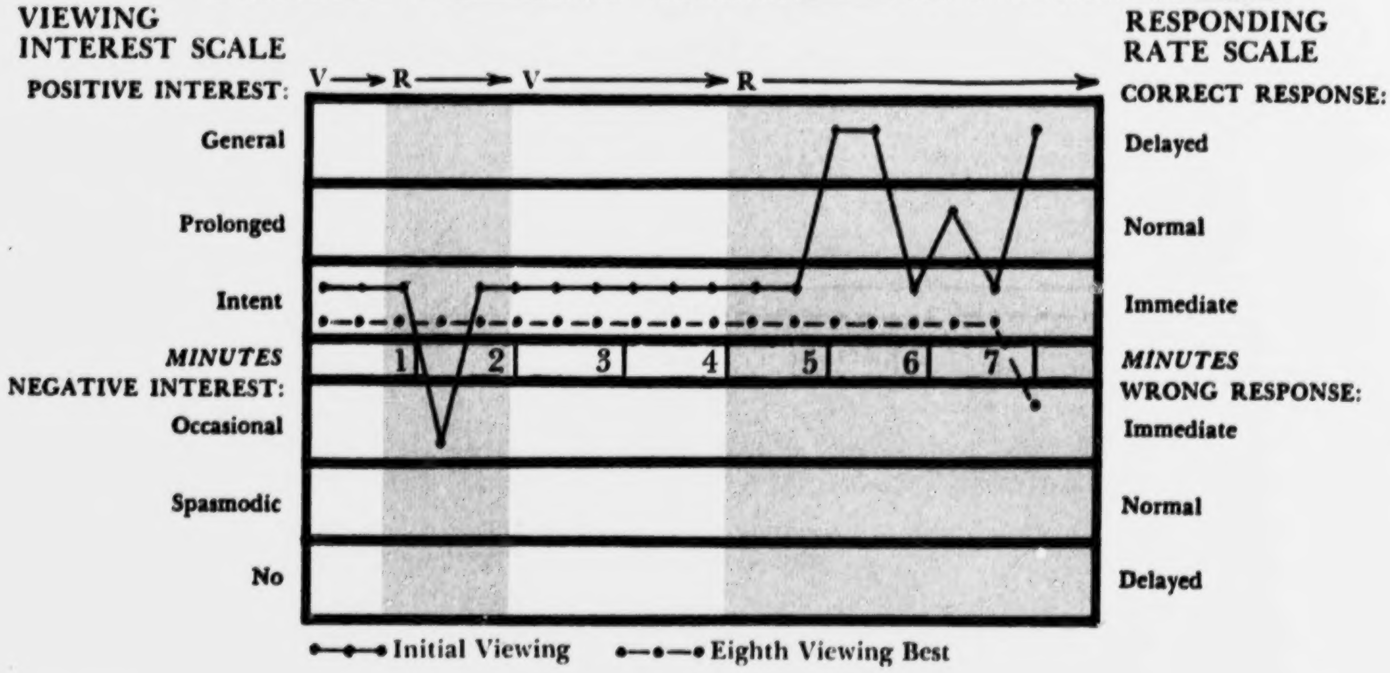


CARTRIDGE NO. 16 NO. VIEWINGS 9 NO. EVALUATIONS 4



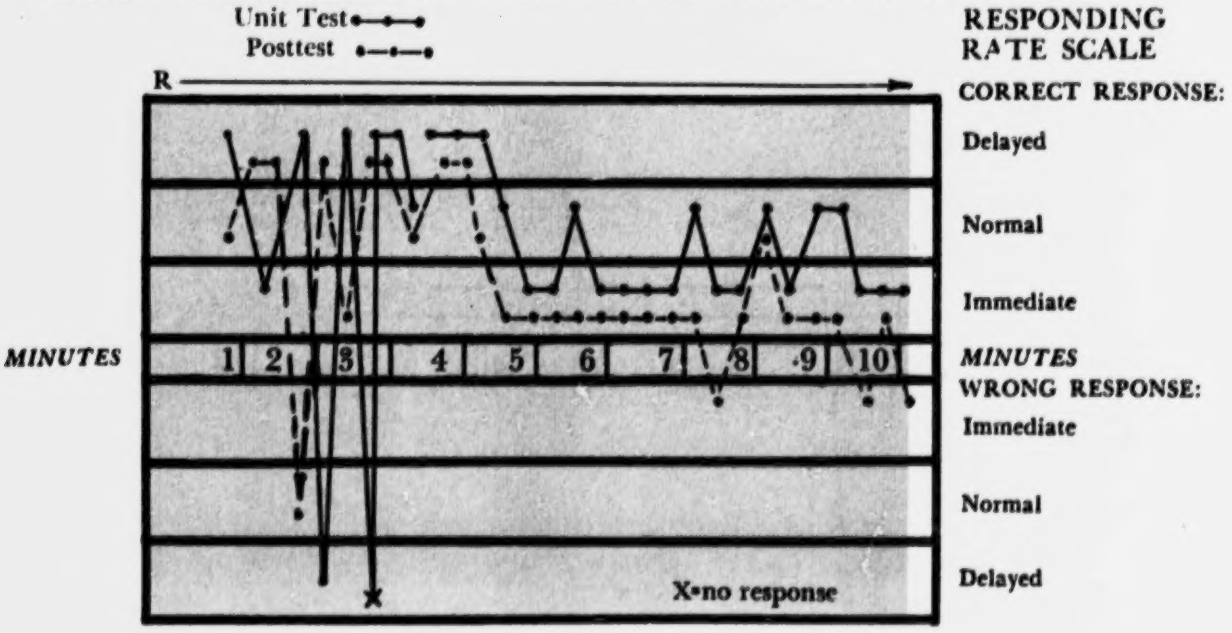
Case Study II
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 12 NO. EVALUATIONS 6



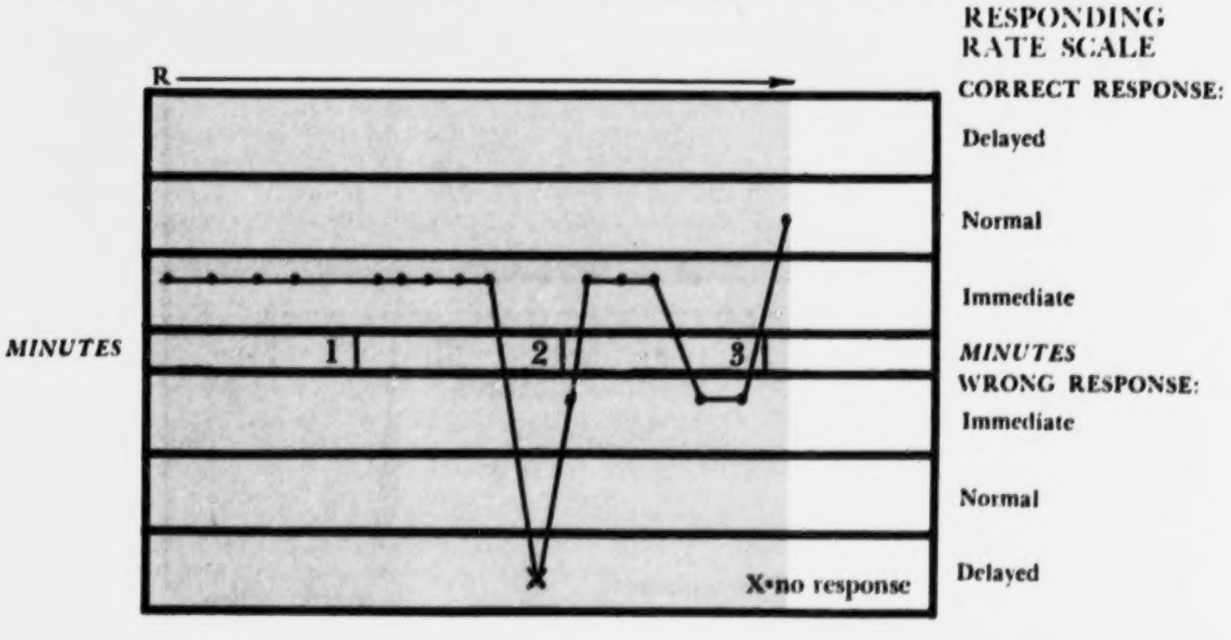
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



of the film and tended to alternate hands in her responses. As the showings progressed she began to be more discriminating and seemed to grow in her understanding of the concept, as evidenced by a 94% rating on the final test film of this series. She may have lost some knowledge over the summer as her rating in the fall dropped to 84%. She scored 88% correct on test #19, which measured knowledge of left and right and use of the projector. Twice she used the wrong hand to turn on the projector, so was either following only part of the directions or misreading the words "left" and "right."

Case Study II's composite record on the multiple word teaching films showed an absolutely straight line at the intent interest level. Her continuing interest and close concentration were almost unbelievable. This close attention produced excellent results, though, as she increased her test score from 62% on the pretest to 76% on the final unit test, and scored 90% on posttest #25, which was narrated on film by her own teacher. The difference in the two test scores may be due to the fact that she had learned to watch for the names of two foods while viewing test #24, so did better on #25. Her errors often occurred when two items were designated for her selection from paired foods.

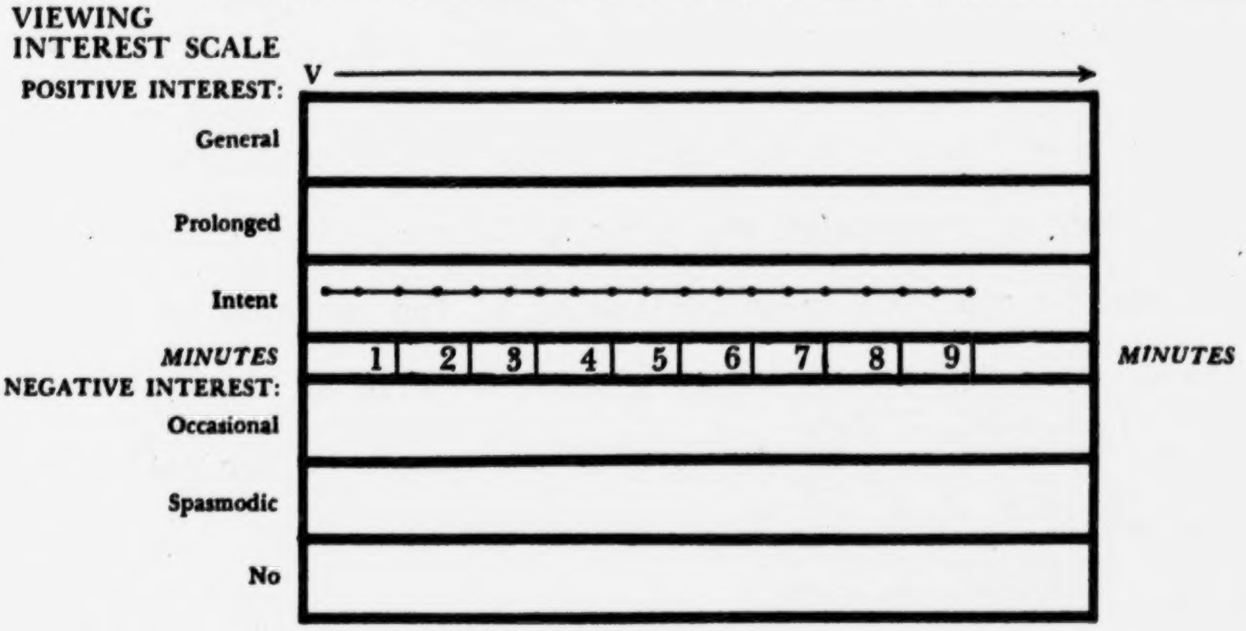
Case Study II

EVALUATION PROFILE

MULTIPLE WORD APPROACH SERIES

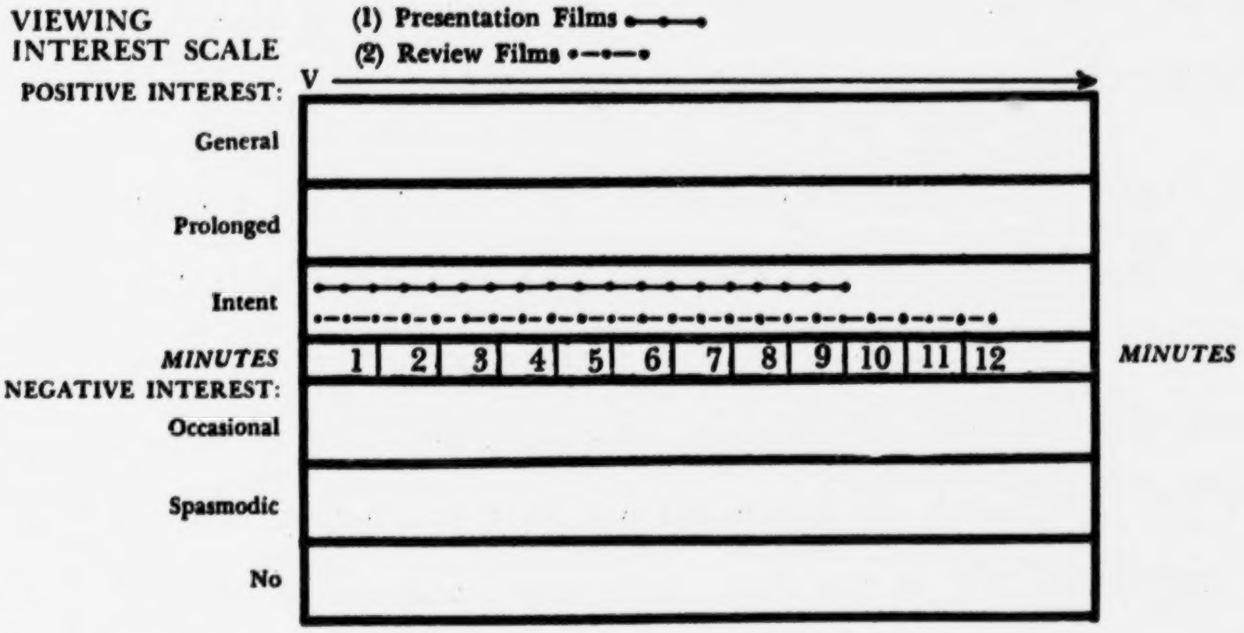
Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 7 NO. EVALUATIONS 7



Initial and Best Viewing

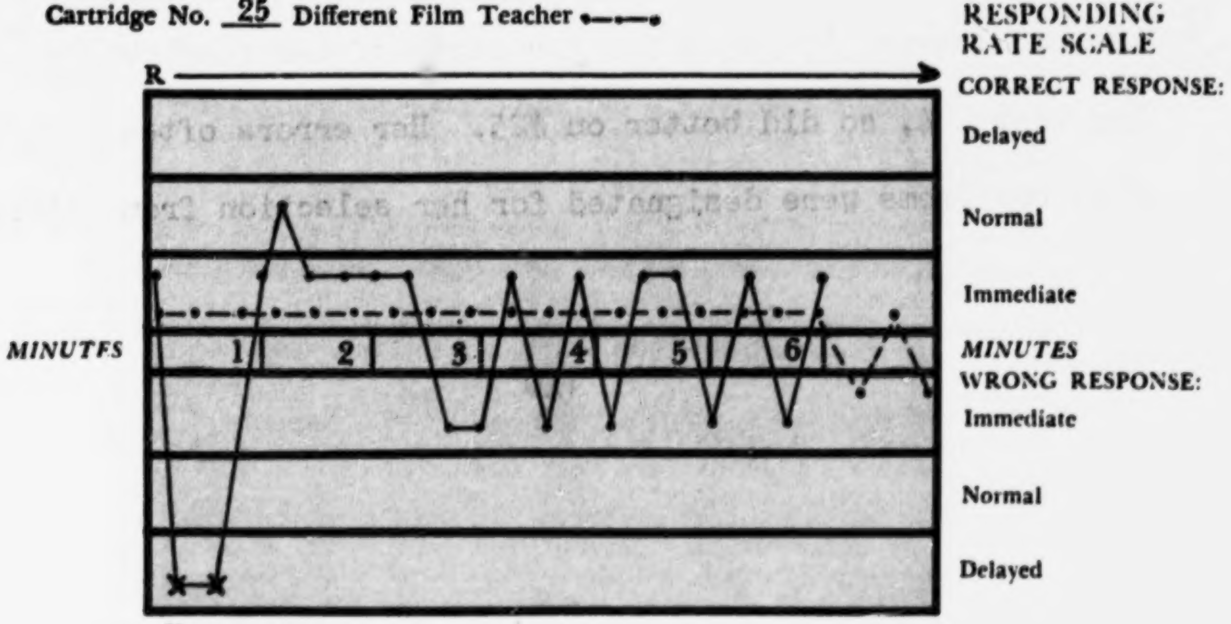
Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher

Cartridge No. 25 Different Film Teacher



X no response

Case Study II (continued)

The intent interest level shown by this child throughout the viewings has been very instrumental in helping her gain in lipreading ability. This maturity of behavior has made it possible for her to acquire lipreading skill equal to the older subjects who have had the benefit of more training. She never tired of viewing the films and remained attentive throughout the course of the entire project.

Chronological Age: 5-10

CASE STUDY III

School Achievement Level: K

Reading Age: Readiness

Audiogram not available.

Student moved from city.

* * * * * *

This case is a very emotional and excitable girl of five years, ten months of age. She has a profound hearing loss, resulting from nerve deafness, cause of which is unknown. She suffers from enuresis, and the family history indicates the possibility of some emotional instability.

The child seems very desirous of making contact with other children in play and sometimes teases them. She has suffered rejection occasionally and exhibits strong emotional reactions to this non-acceptance. This frequently happens in new groups as she has difficulty in communicating her desires and in understanding the feelings of others. The neighborhood children who will accept her are sought out. She is a very independent individual and is extremely active.

She is creative and energetic and uses her hands freely to express herself. She prefers active outdoor play to television viewing but watches about one and one-half to two hours a day.

Case Study III (continued)

The Nebraska Test of Learning Ability indicated that she has above average memory, perception and coordination when compared with other deaf children her own age. Though she may have above-average intelligence, her ability to concentrate is limited. Reminders are frequently needed when she is required to do household chores.

No help in lipreading has been given by the family. They include her in all family activities and she is never left with a "sitter." She has trouble adjusting to new situations.

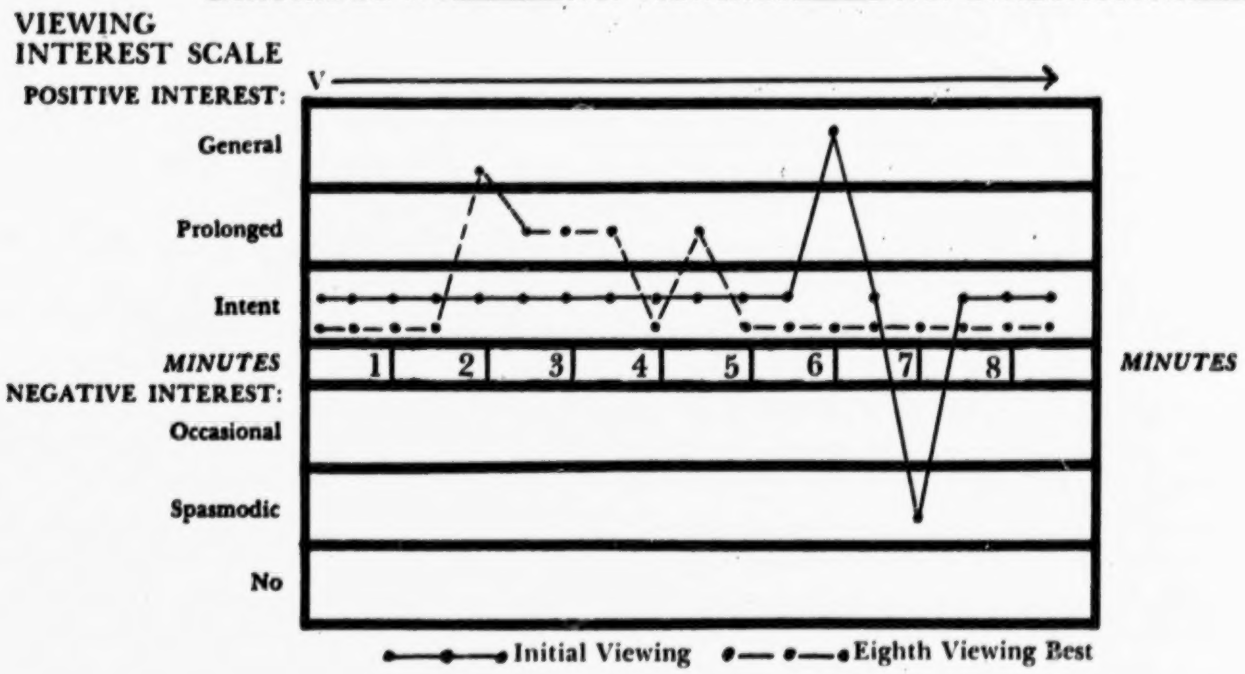
In school this child has much difficulty with lipreading. Her teacher has expressed the opinion that lipreading will always be difficult for her. She is at the "readiness" level in reading and her school achievement level is kindergarten. She has attended school for two years.

In viewing the films she was very distractible. She was quite emotional and gave interesting reactions but "clowned" in mirror a great deal. She frequently babbled and the words were not always distinguishable, but she often said "ball" and counted on her fingers. Her viewing behavior was quite erratic but she watched attentively after being told to do so by her teacher. She never adjusted the sound volume on the projector and probably could not benefit from it. She must learn to concentrate before she can develop into a good lipreader.

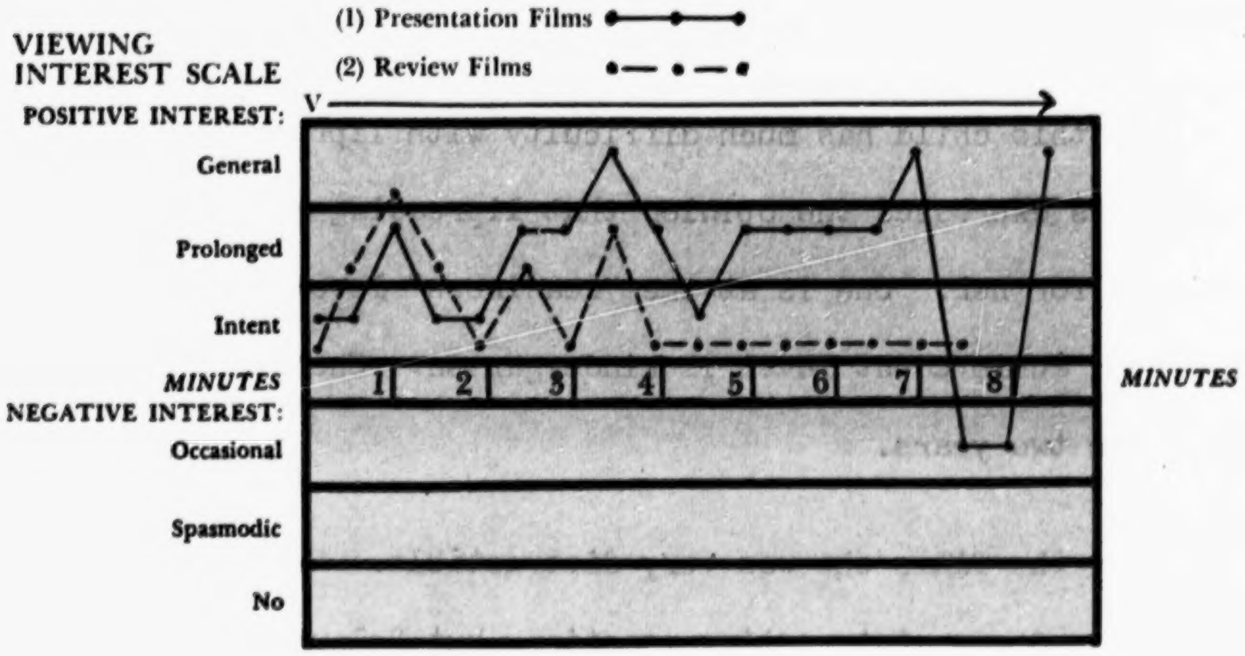
Case Study III
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 10 NO. EVALUATIONS 6



Composite Profile



Case Study III (continued)

Regarding cartridge #2, the composite evaluation record of this subject's viewings shows a drop to "occasional interest with frequent distraction" near end of film. As she gained in understanding (through the guidance of her teacher) that the viewing was a lesson and had a purpose beyond that of entertainment, she learned to watch more intently. Cartridge #3, #6, and #7 records show that interest was maintained at the "prolonged and intent" interest level throughout.

The response record shows that this child frequently followed the pattern set by the film, rather than relying on her lipreading ability. Though many uncertain responses were recorded, these were always correct. Normal to immediate speed of response was recorded for 39 responses compared with 22 uncertain or delayed responses.

The anecdotal record indicated that the subject gained in self-reliance and the ability to concentrate during response film viewings, as the majority of uncertain responses occurred during the first three viewings. After that the responses were more immediate and less hesitant, even when new material was shown.

In summary, although this girl was the most distractible and erratic subject, she did maintain, on the average, a prolonged interest level in her viewing pattern. Her interest was very high during response films and some increase in degree of concentration

Case Study III (continued)

was shown. The isolation required to view the films was a quieting influence for this extremely emotional child.

For Case Study III, the observer believes that the results indicate that even a child of her excitable nature will watch a well-designed learning film with interest and participate with eagerness when a response is required.

(Unfortunately the subject moved away and the study was necessarily terminated at this point.)

Chronological Age: 5-11

CASE STUDY IV

School Achievement Level: First

Reading Level: Beginning First

Audiogram	May 1964					
	250	500	1000	2000	4000	8000
Right ear	65	80	95	95	100	N.R.
Left ear	70	80	95	90	100	N.R.

* * * * * *

This is a dark-haired, left-handed, appealing child of five. She was a premature baby and had a staphylococcus infection at birth. A middle ear infection developed and her hearing loss was first noticed when she failed to develop speech at 15 or 16 months. She has a severe hearing loss which is helped somewhat with amplification.

She is well-adjusted socially, though slightly aggressive in play. She is willing to enter into all activities and is eager to excel. Her relationship with her family appears to be excellent and she participates in all family activities.

She prefers toys requiring use of hands, such as building and manipulative toys. Printing and drawing fascinate her also. On television she especially likes cartoons and humorous shows. She averages approximately one and one-half hours viewing a day.

Case Study IV (continued)

On the Nebraska Test of Learning Ability she rated above average and exhibited good reasoning, insight, and memory. Her sightreading vocabulary is amazing for a five-year old, but her speech is not clear as yet. She has had two and one-half years of training in the public schools and two years at the University of Nebraska Speech and Hearing Clinic. Her reading grade level is "beginning first" and her school achievement is first grade.

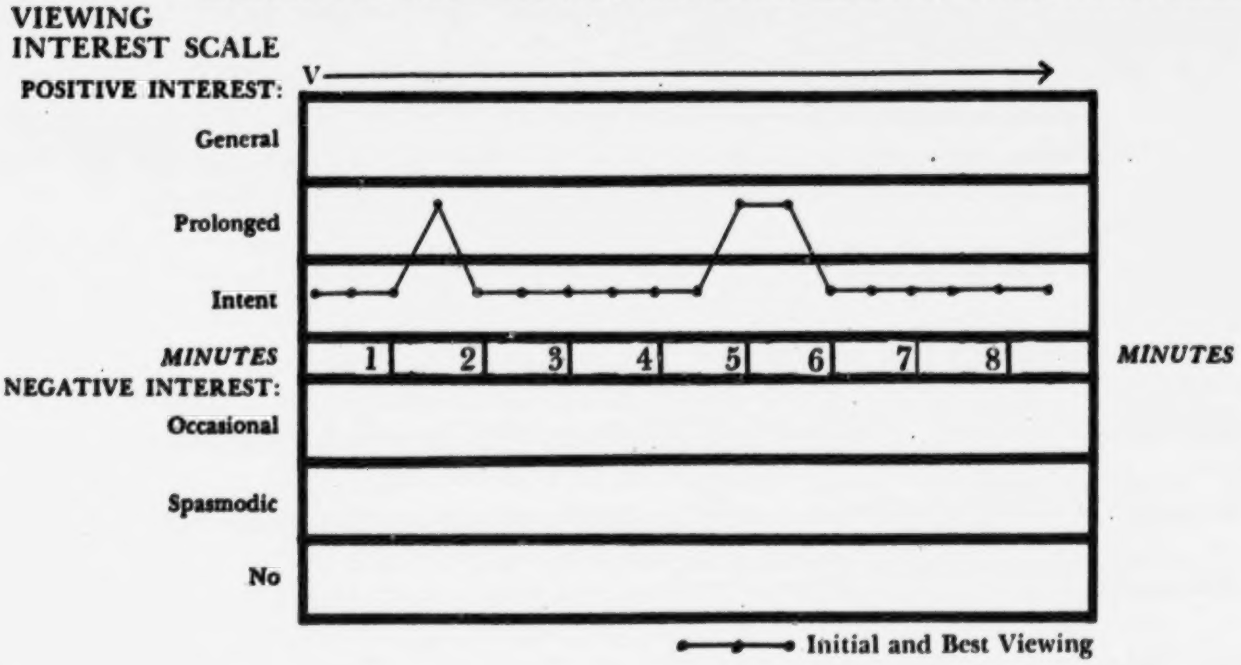
She usually watched attentively during the first viewing of a film, but sometimes found it difficult to watch over a longer period of time. She started to yawn and became restless and sucked her finger. She was easily distracted by unusual activity in the room. She liked to have the divider screen in just the right place before she started viewing. Sometimes she studied her lip movements in the mirror. She seldom adjusted the sound volume control of the projector, which probably gave her little help, and she seemed to rely solely on lipreading.

The composite picture of this child's viewing level on the single word emphasis approach shows interest maintained at the prolonged to high level with one drop to general interest. This distraction occurred during the first film which she viewed a total of 15 times. This is probably too many viewings for a child of high intellect, yet considering this fact, plus her familiarity with

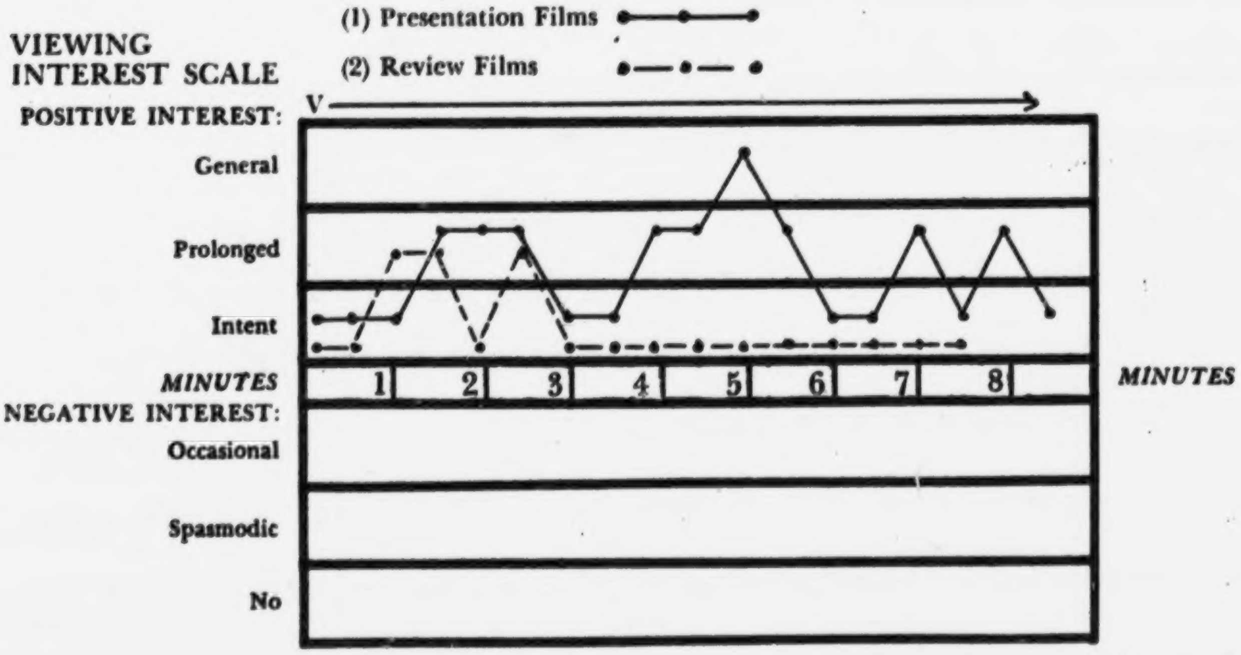
Case Study IV
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 15 NO. EVALUATIONS 7



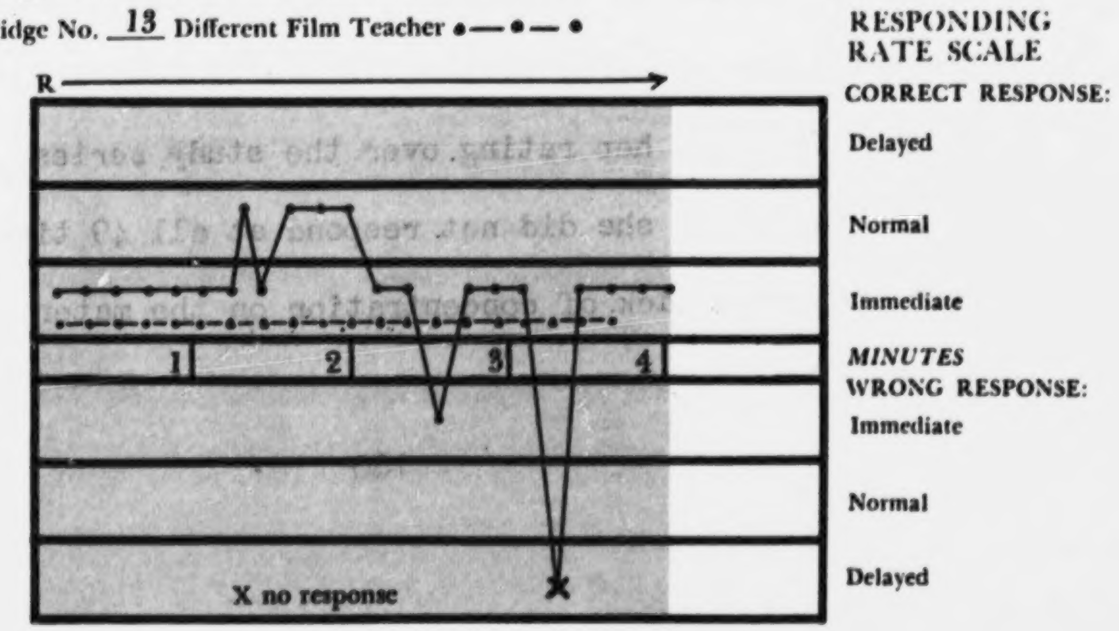
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher ●—●—●

Cartridge No. 13 Different Film Teacher ●—●—●



the word studied, it is surprising her prolonged interest level was maintained so consistently. She verbalized the words and counted the objects on her fingers. She frequently said the names of colors.

The response films presented a challenge to her and she did an excellent job of lipreading, making 121 correct responses out of a possible 126. She was quite pleased with the response film requiring use of the four learned words, and though she clowned in the mirror during the first viewing, she had a high overall rate of correct responses, even though no sound was used. She was 96% correct in her responses to the three test films of the single word emphasis approach.

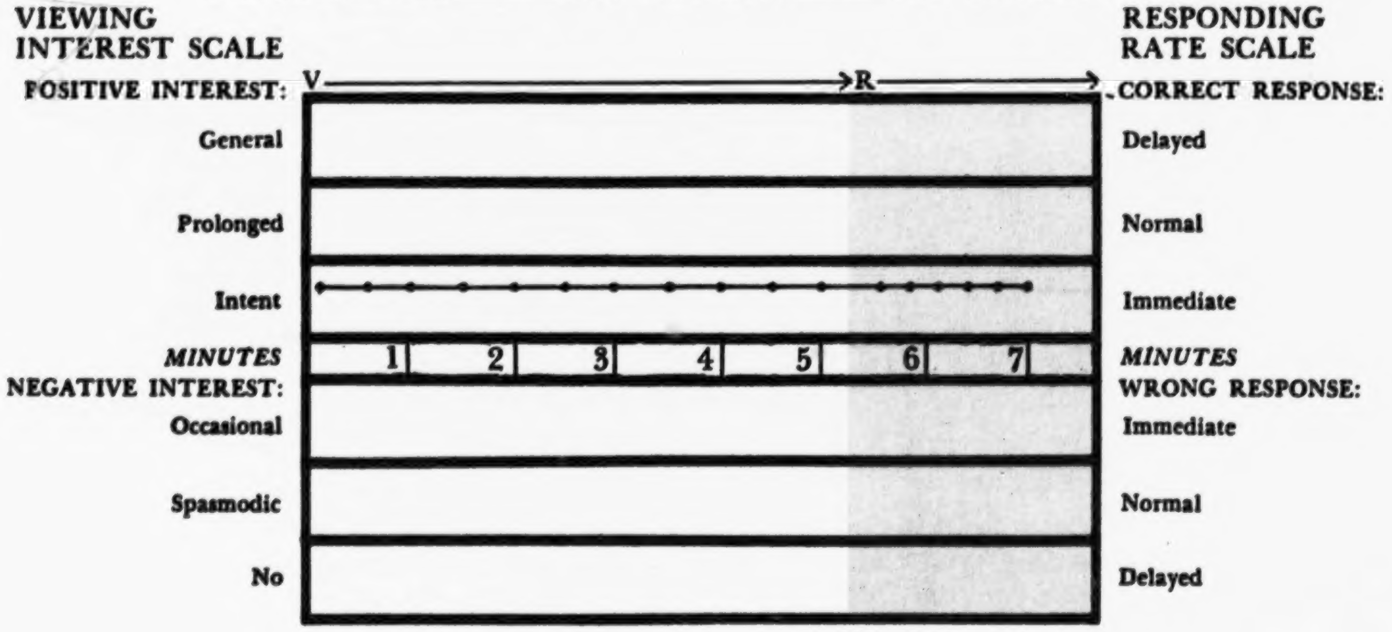
On film test #12, when no cueing was used, she got 21 responses correct out of a possible 23. She seemed to understand the directions right from the beginning. When tested in the fall she made a perfect score on the same test. Film test #13 was given six months after the teaching films were shown, and she still retained the 100% score.

When the associated word films, left and right concept, were presented her accuracy rating dropped to 60%, second lowest of the group. This was her rating over the study series, and was due to the fact that she did not respond at all 49 times out of 130. This indicates lack of concentration on the material presented,

Case Study IV
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

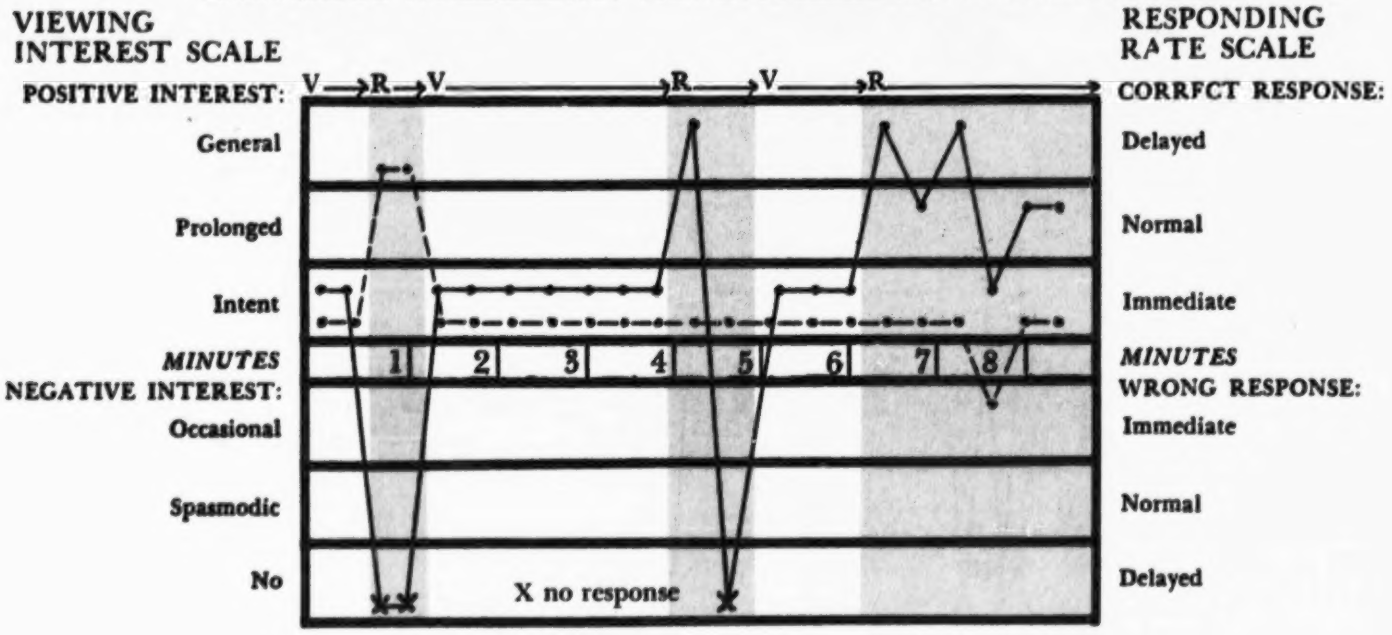
Initial Film

CARTRIDGE NO. 14 NO. VIEWINGS 8 NO. EVALUATIONS 3



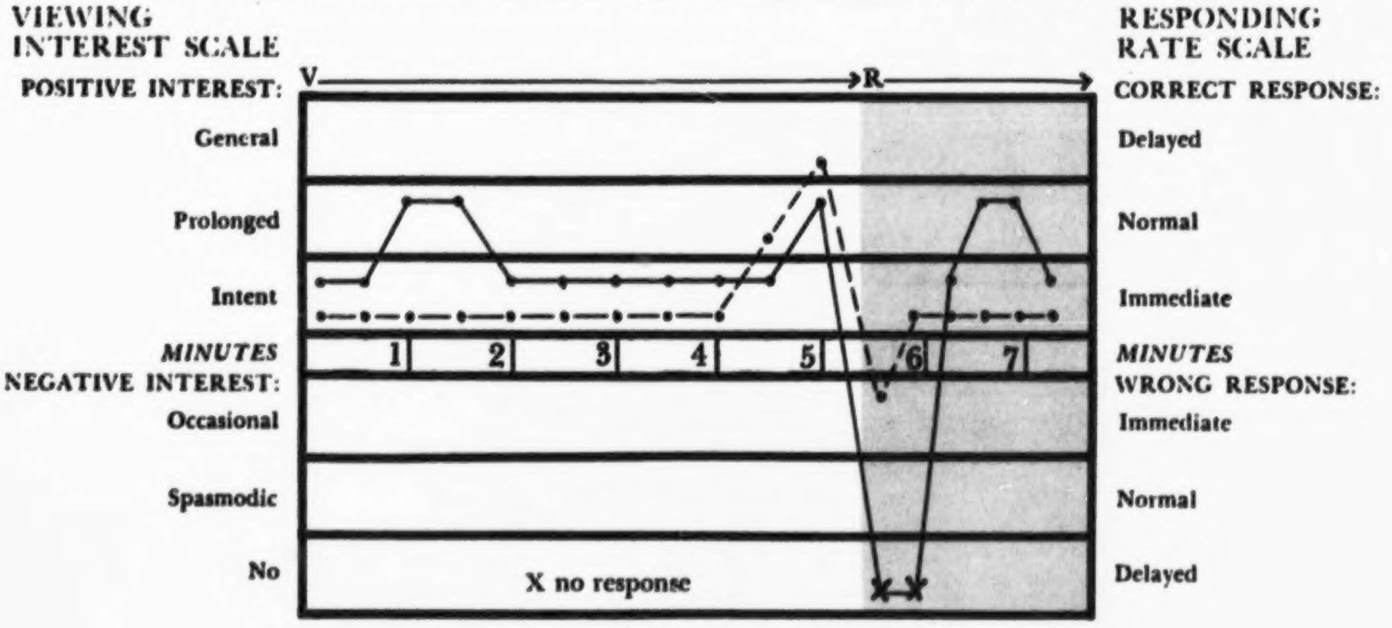
•—•—• Initial and Best Viewing

CARTRIDGE NO. 15 NO. VIEWINGS 8 NO. EVALUATIONS 4



•——• Initial Viewing •—•—• Sixth Viewing Best

CARTRIDGE NO. 16 NO. VIEWINGS 6 NO. EVALUATIONS 3



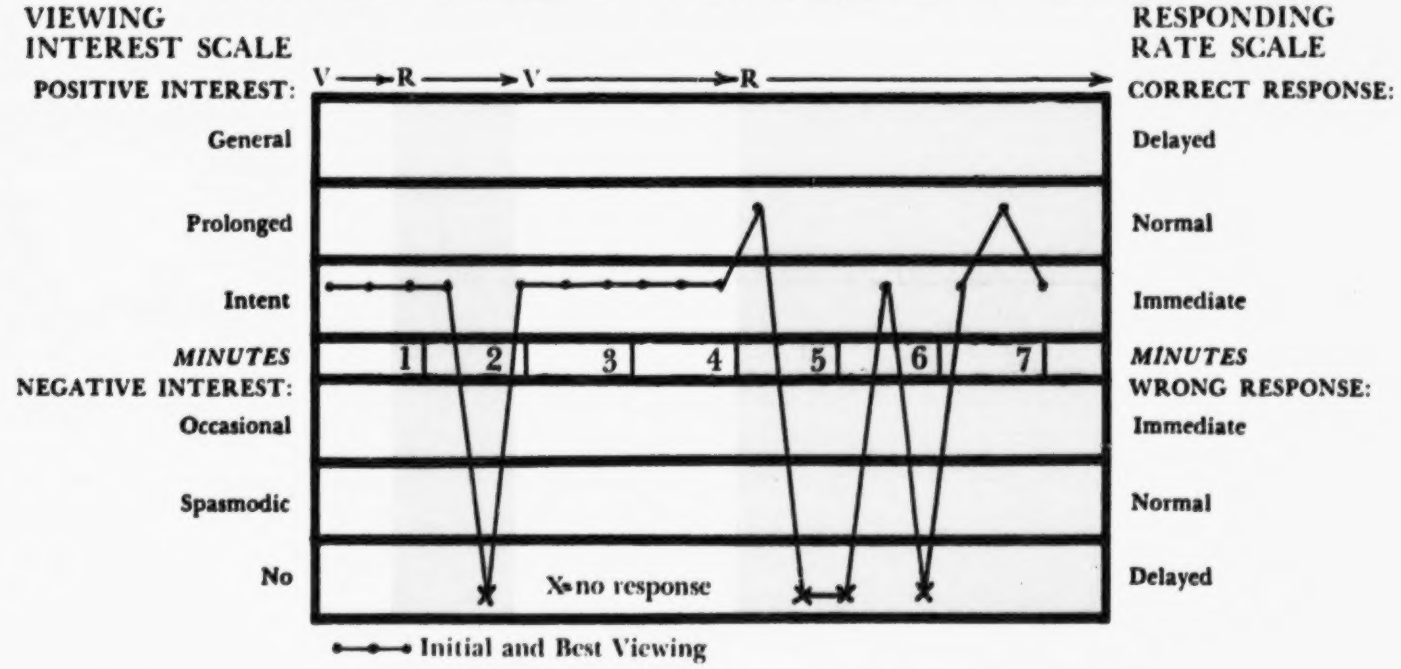
•——• Initial Viewing •—•—• Third Viewing Best

Case Study IV

EVALUATION PROFILE

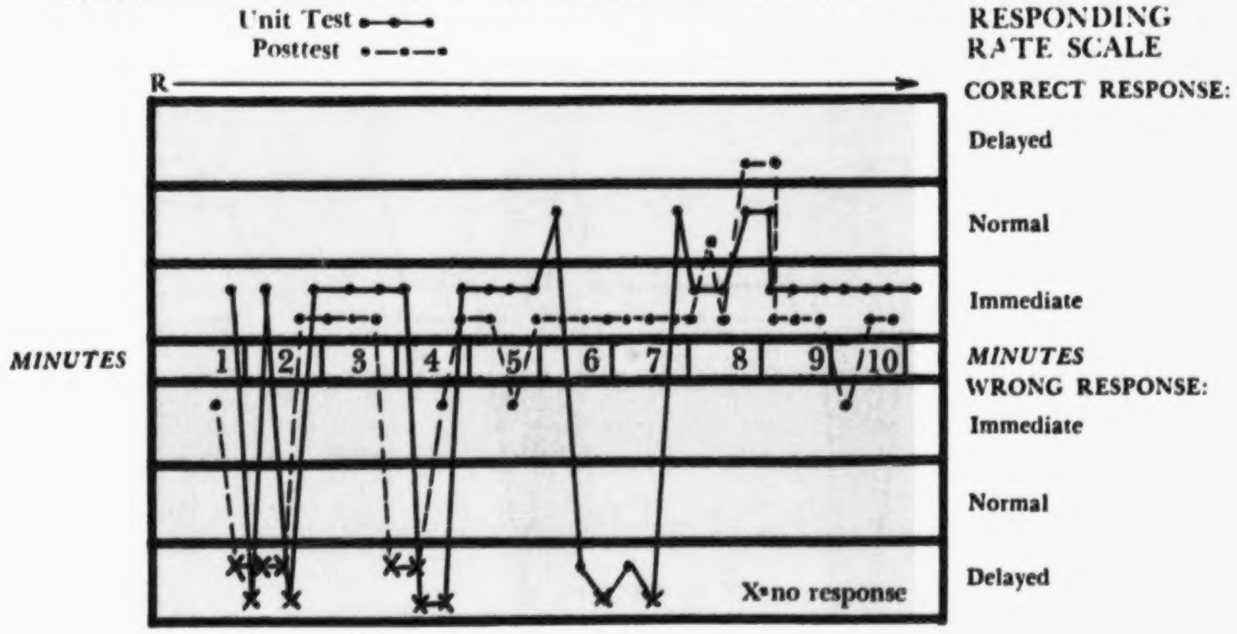
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 7 NO. EVALUATIONS 4

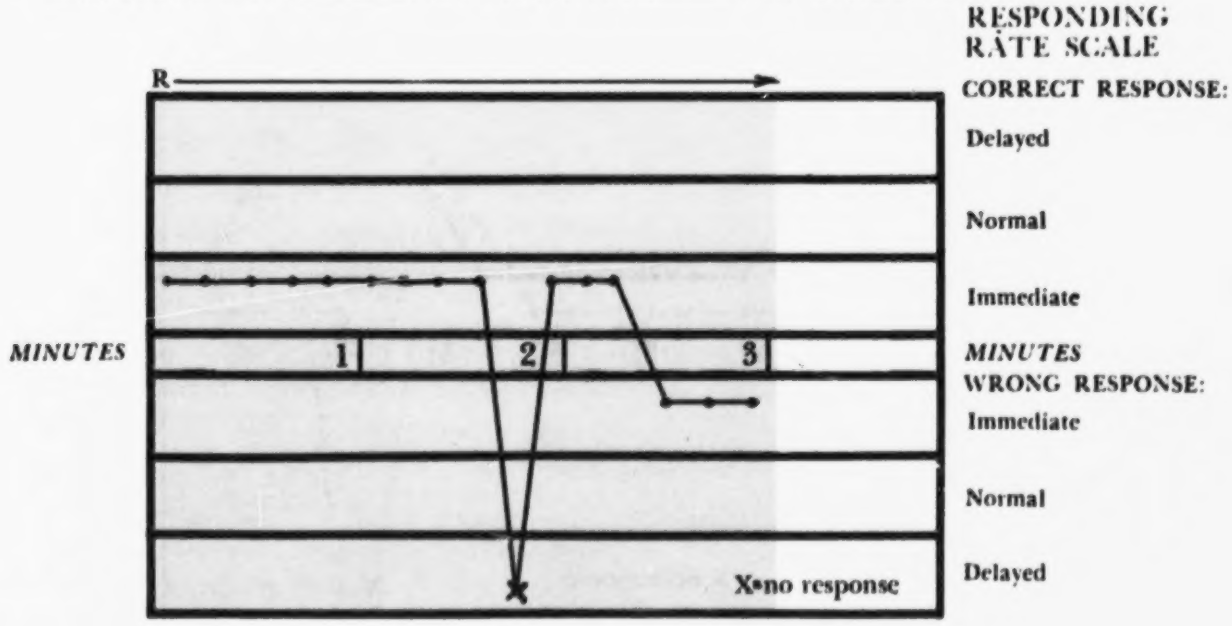


Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



and it is true that she was occasionally inattentive. When she did make responses they were correct 78 times, compared to 3 incorrect. Her rating on the final test film of this series was 74%. Though this is still next to the lowest in the group, it represents a 14% improvement. When the same test was repeated four months later, she scored 71% correct, lowest of all subjects.

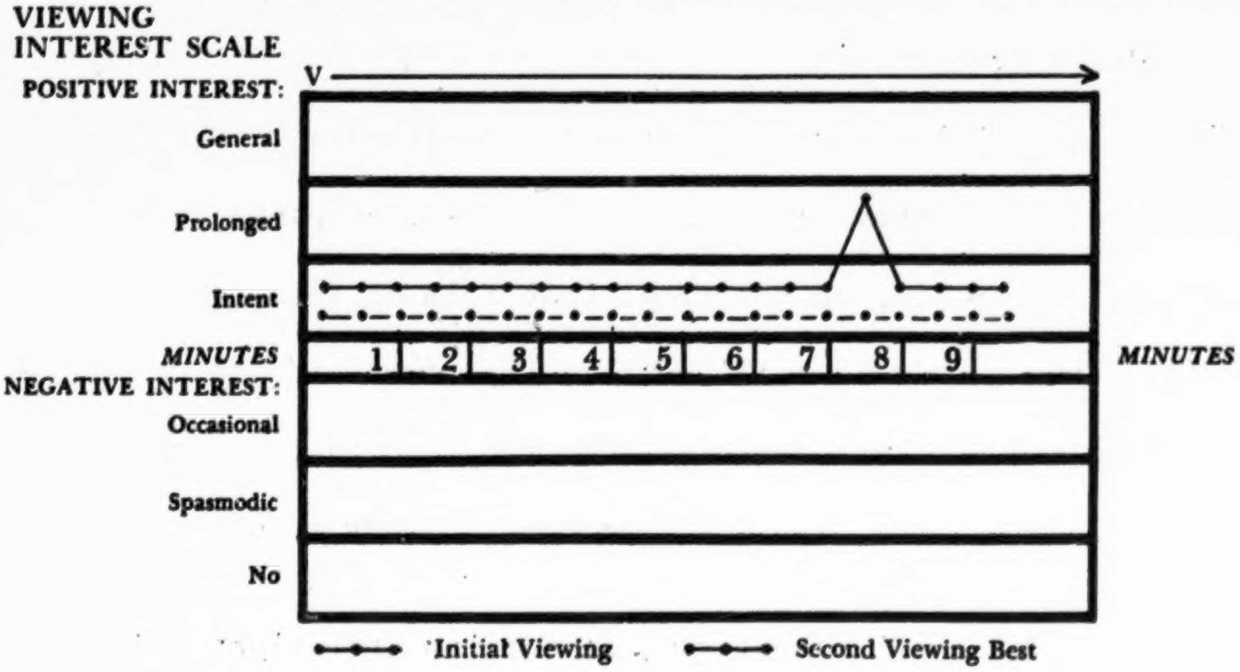
Her score of 84% on film test #19, concerning left-right and use of projector, was quite an improvement, although the test was much more difficult. This seems to indicate that she can lipread "left" and "right" but that there may have been auxiliary words in test #18 which were too difficult for her; it may be she found the posttest more interesting and tried harder.

At first she had seemed challenged by the new material, but later as the films increased in complexity she became inattentive. Though she did not know the left-right concept when pretested by the teacher, she apparently learned it from 2 viewings of the film, as she was able to respond correctly to the room teacher on posttesting. Some of her failures to respond were probably due to inadequacies of film structure, but apparently inattention accounted for most of them. This was especially true of the table setting film #17, as she gave more responses when viewing it the first time than she did on later viewings. Since verbal responses were often necessary and her speech is inadequate, this may have

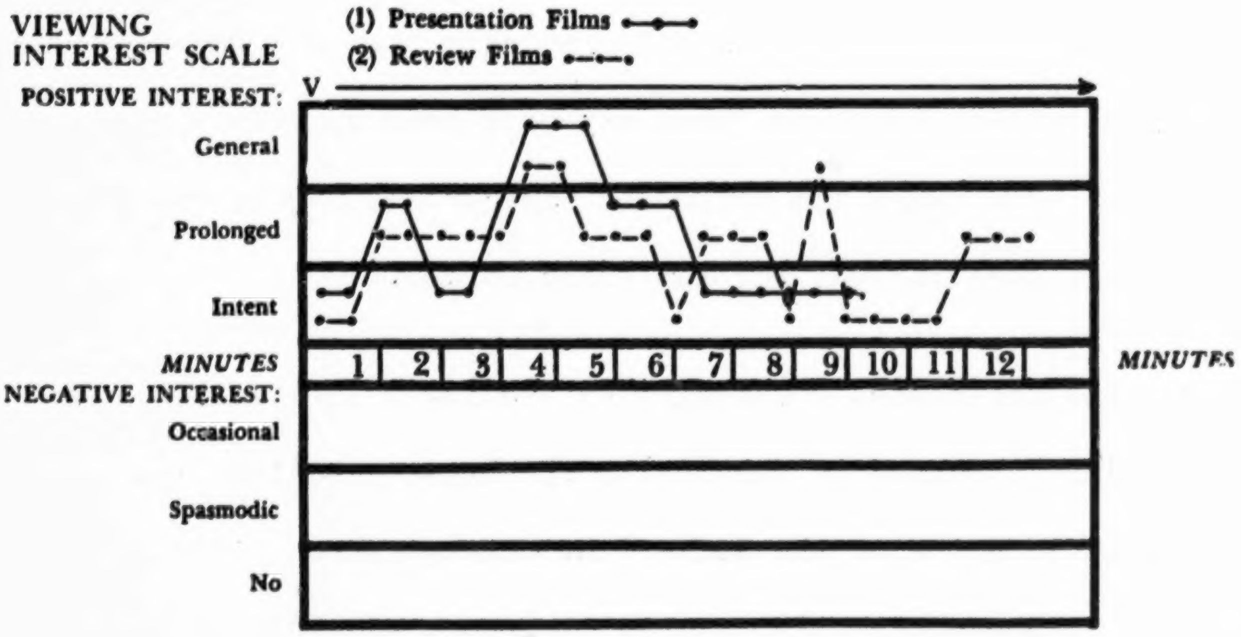
Case Study IV
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 6 NO. EVALUATIONS 6

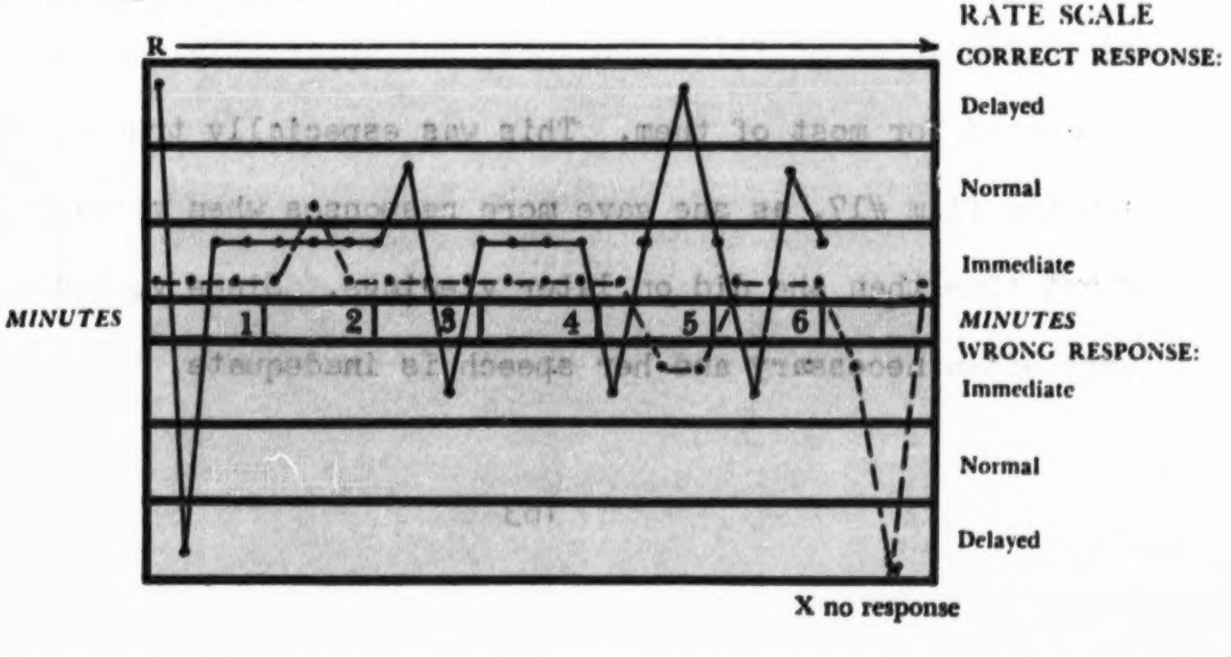


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher ●—●—●
Cartridge No. 25 Different Film Teacher ●-—●-—●



been a factor in her lack of desire to respond. Also she seemed to see no point in responding verbally when no one was present, but when told to speak by room teacher she could respond correctly.

On the multiple word approach, stressing foods, this subject's evaluation record shows several drops to "some" and "frequent" distraction. Her interest was high during the first two teaching films, but during the last two she day-dreamed and often clowned in mirror. Frequently she put her face close to glass, trying to see what was on the other side. Of all the subjects, she was the only one who seemed to suspect that there might be someone back of the one way observation mirrors.

In spite of her lack of attention to the two final teaching films she raised her rating of 81% on the pretest over foods to 90% on the test given at the close of the series, missing only two out of twenty-one responses. This seems to be a surprising increase, and it may be that she was inattentive because she already knew many of the words from watching the first two films closely and did not have to give the films her undivided attention. On retesting with cartridge #25, she dropped to 81% accuracy. However, on this test she drew doodles on the pages and because of this distraction got mixed up at the end of the test.

Case Study IV (continued)

The reactions of this subject with her profound hearing loss combined with high intelligence lead the observer to believe that this child can readily learn new material even of an abstract nature, but she will not respond unless it seems sensible to her to do so. She seems to be quite an independent thinker, and must be constantly challenged and made to understand reasons. Her attitude toward learning seems to have deteriorated somewhat over the summer; she day dreams and is not always co-operative. She does not appear to have a great desire to acquire new knowledge. Motivation of this child may be the greatest problem to her teachers. This indifference must be overcome as she has high ability.

Chronological Age: 6-11

CASE STUDY V

School Achievement Level: First

Reading Level: First

Audiogram	May 1964					
	250	500	1000	2000	4000	8000
Right ear	75	90	90	95	N.R.	N.R.
Left ear	65	70	90	85	80	70

Bone conduction thresholds suggested some conductive loss.

* * * * * *

This is a boy of nearly seven years of age. He has nerve damage of an unknown cause, first noticed at two years of age. He has a profound hearing loss. Bone conduction thresholds suggest conductive loss.

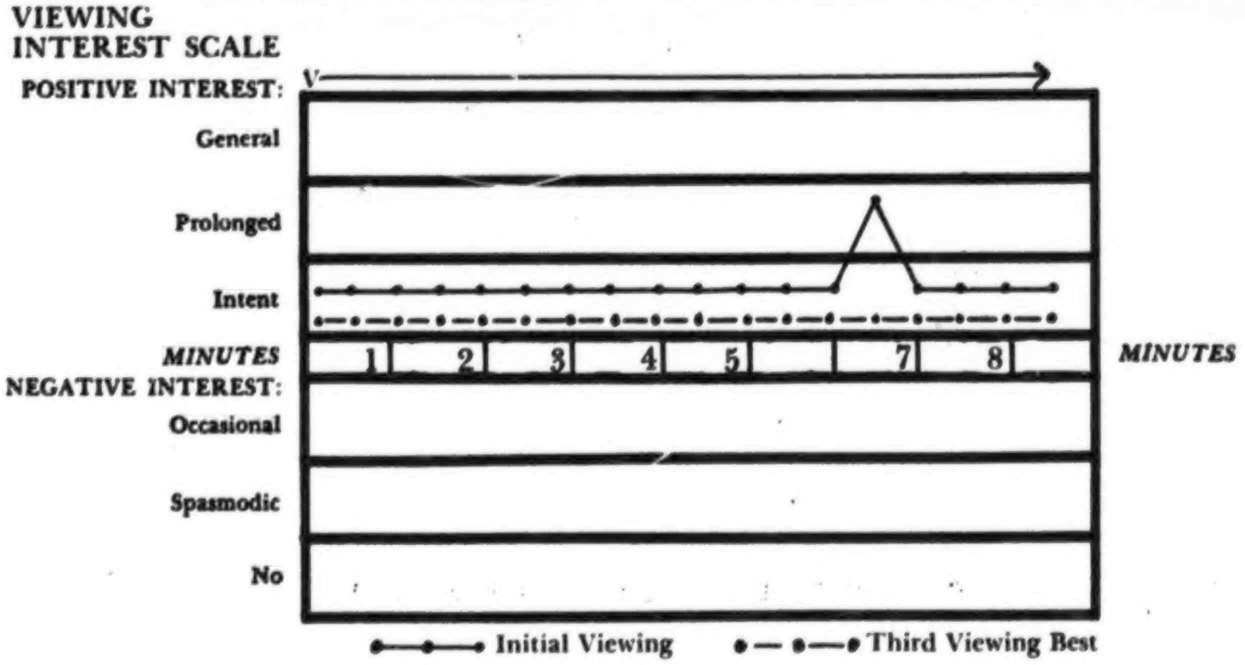
He likes to play with others and is able to talk to them. He enjoys outdoor play and is fond of drawing. Work with his hands is his special delight. He creates pictures and has some artistic ability.

His parents read to him a great deal. He learned to read lips at an early age and could understand his parents before he could talk. Dual hearing aids have given him some hearing ability and he has quite a bit of understandable speech, though his voice has a hollow sound. He has exhibited some impudence in school, which

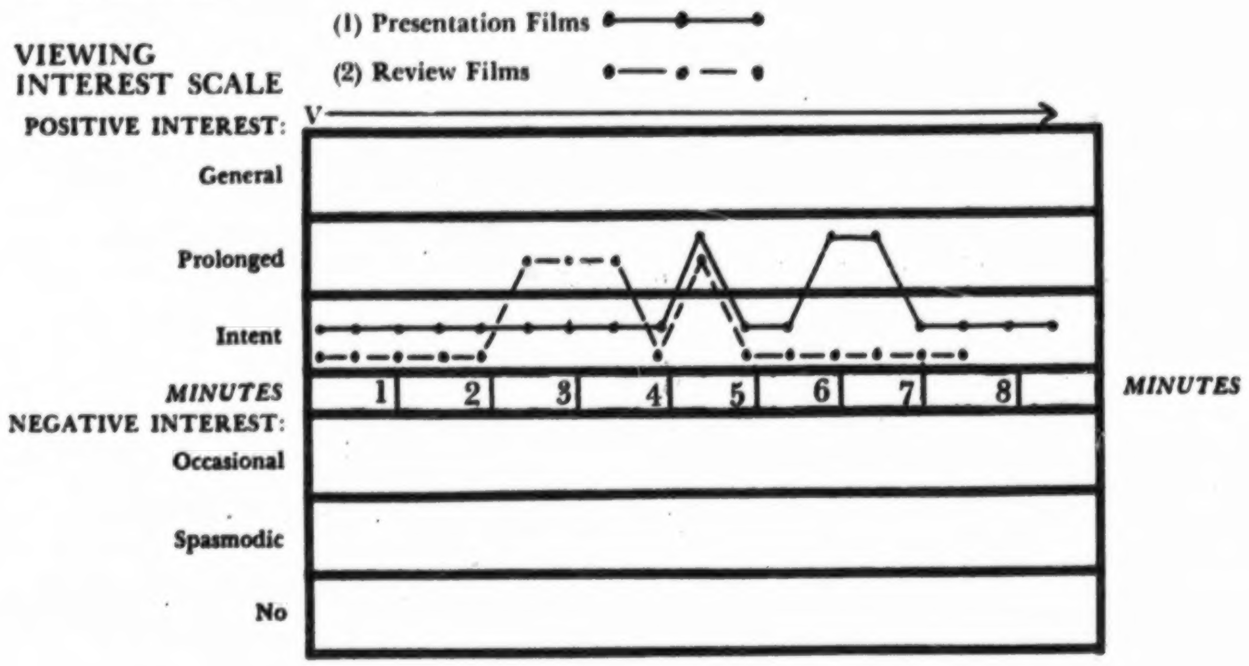
Case Study V
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 8 NO. EVALUATIONS 6



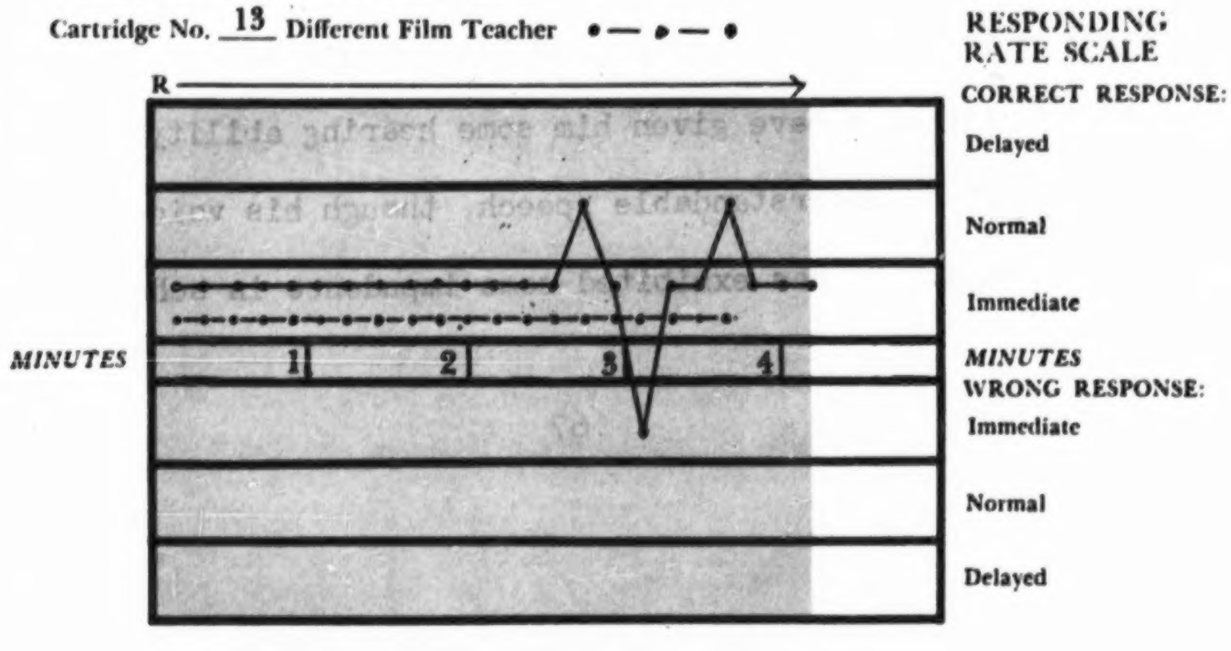
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher

Cartridge No. 13 Different Film Teacher



may be an indication that he is a bit resentful or frustrated concerning his handicap.

Television is viewed about two hours a day, depending upon the weather; as he usually prefers outdoor play when the weather permits.

The Nebraska Test of Learning Ability indicates he is of normal intelligence. His school achievement and reading level are first grade. He attended the public schools two and one half years and received one year of help at the University of Nebraska Speech and Hearing Clinic.

In viewing the project films, this subject studied the film teacher's face a great deal and often repeated words, sometimes entire sentences. He was usually a very attentive viewer and often adjusted the volume to suit his hearing level.

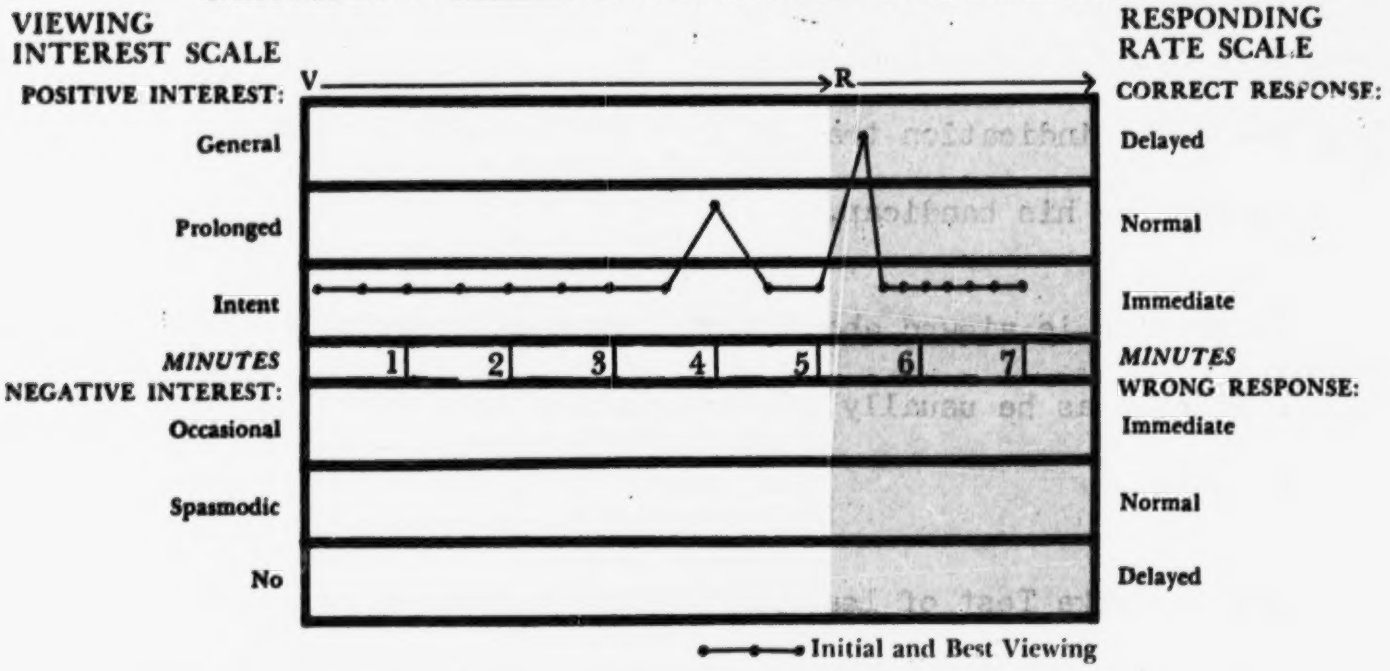
The single word emphasis films were fairly elementary for him. His interest level on the learning films was maintained at the prolonged to high rating. He showed some slight distraction during the viewing of "doll" and "tractor" films and on the "car-ball-doll" review film.

Reaction to the response films indicated that he is an excellent lipreader. He requested earphones when they were not offered,

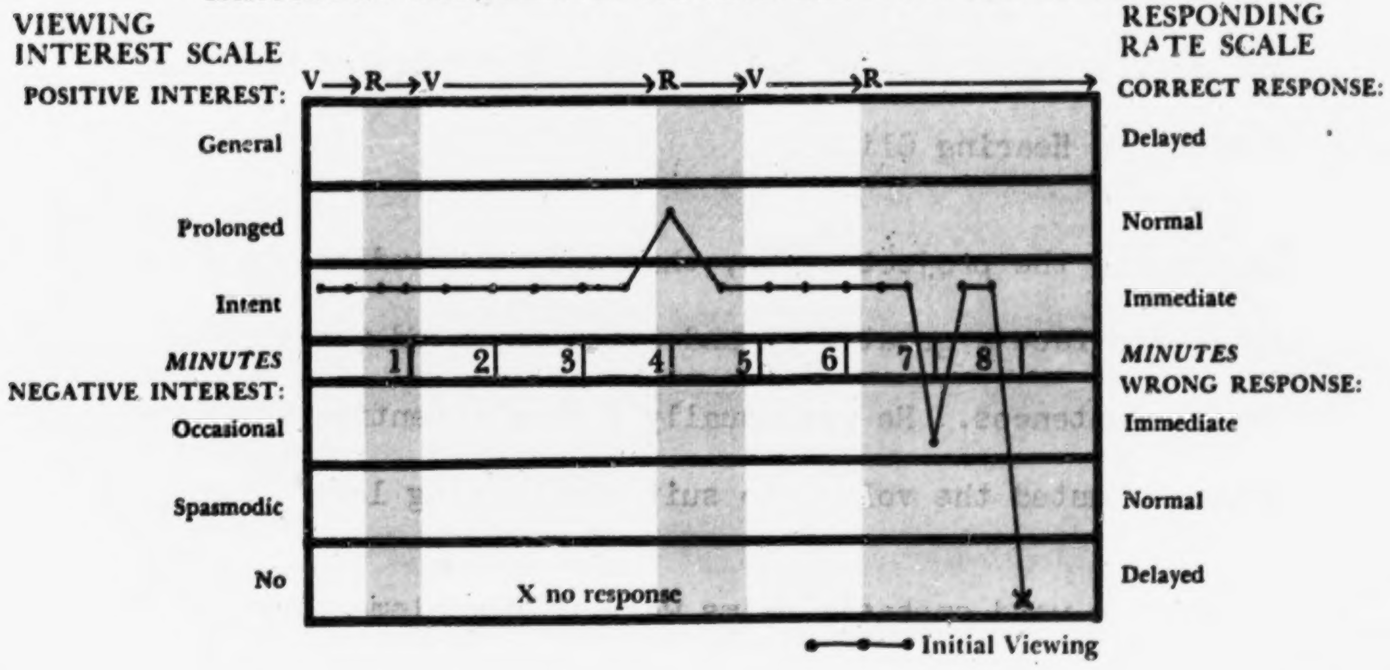
Case Study V
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Viewing

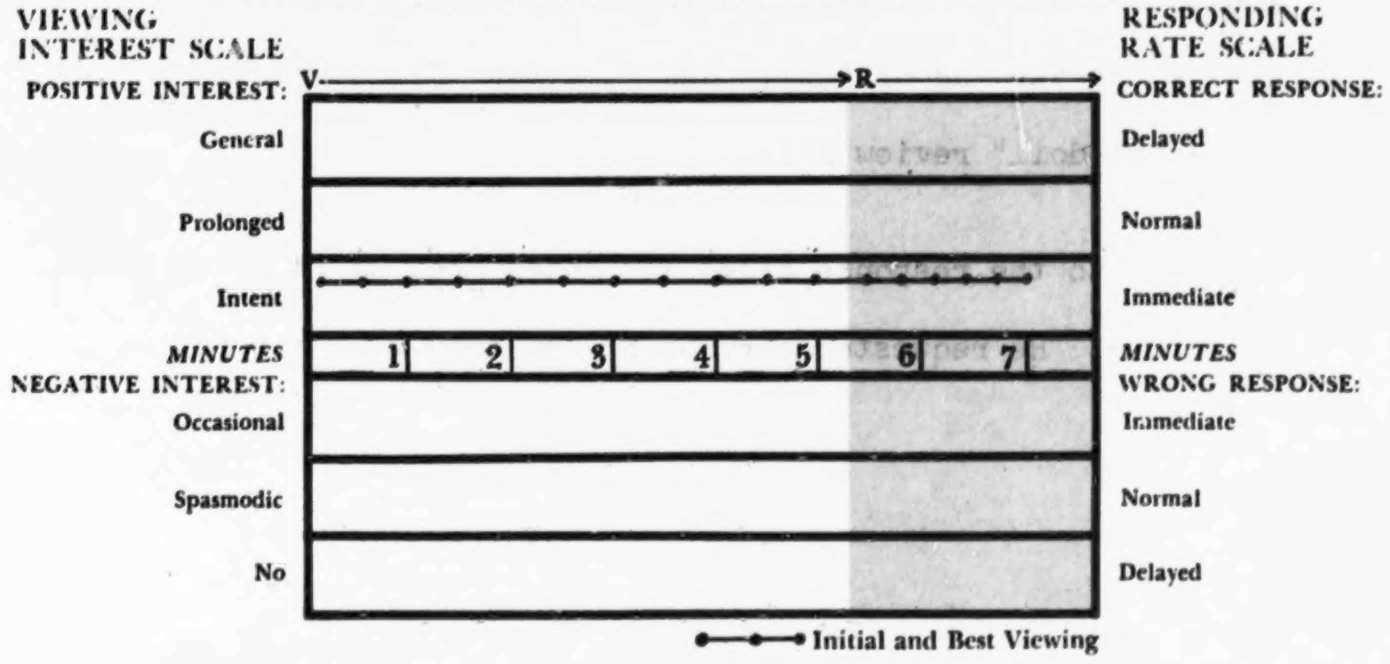
CARTRIDGE NO. 14 NO. VIEWINGS 3 NO. EVALUATIONS 2



CARTRIDGE NO. 15 NO. VIEWINGS 2 NO. EVALUATIONS 1



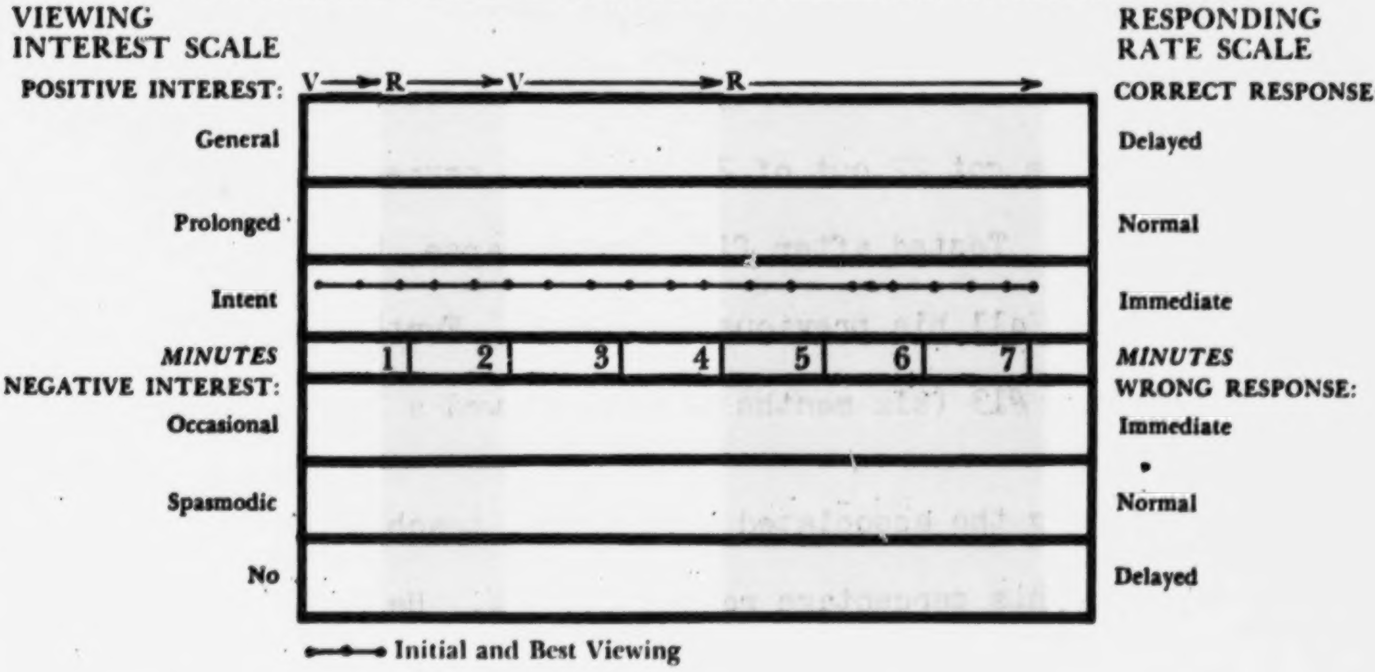
CARTRIDGE NO. 16 NO. VIEWINGS 3 NO. EVALUATIONS 3



Case Study V

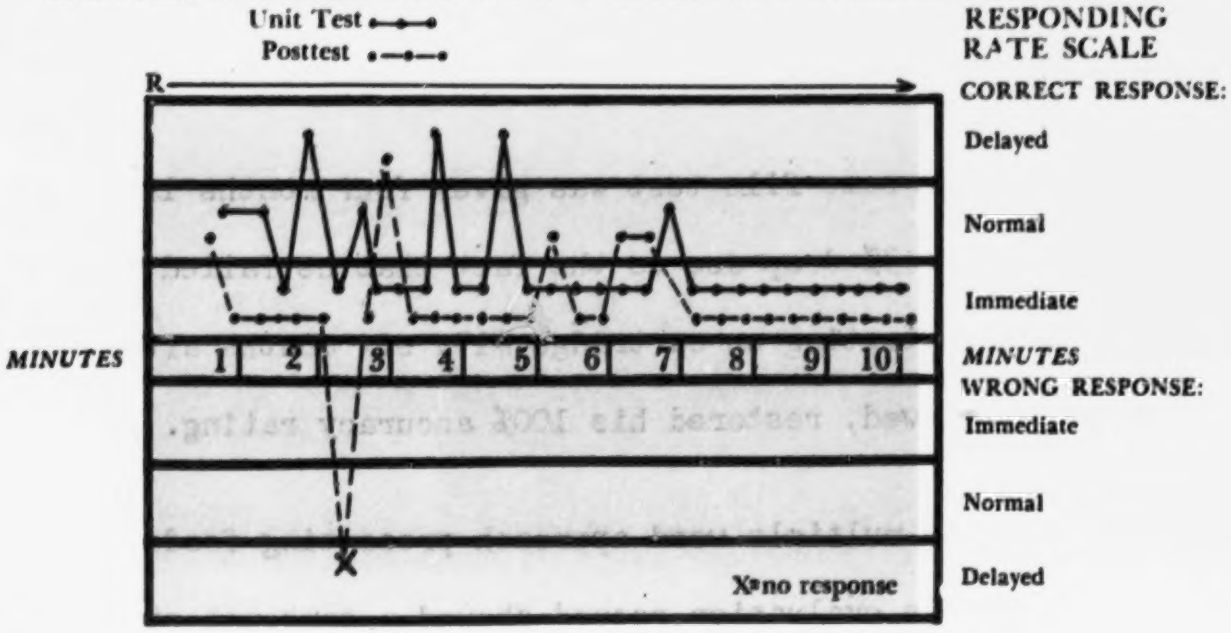
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 2 NO. EVALUATIONS 2



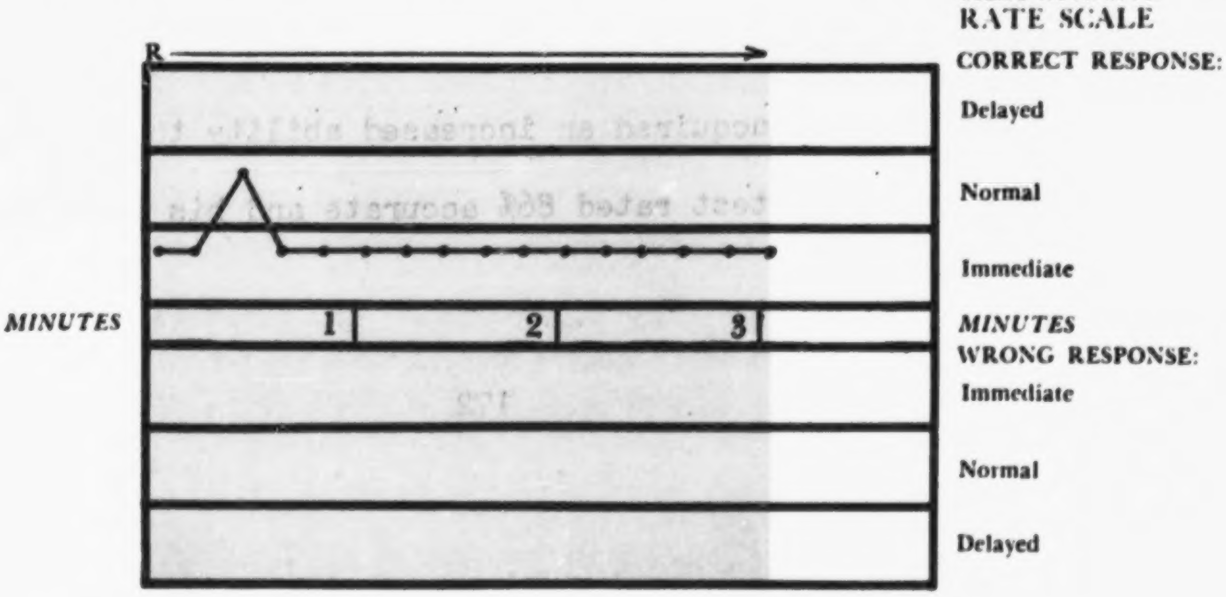
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



but when informed he was to watch without sound he gave perfect responses. When given test #12 one month after study series, he got 22 out of 23 responses correct, rating 96% accurate. Tested after five months lapse, he still scored 96%, retaining all his previous knowledge. Further testing, using cartridge #13 (six months lapse), showed a 100% accuracy rating.

In viewing the associated word films, teaching the left-right concept, his percentage rating was 93%. He was able to achieve a 100% response rating on the final film test #18. Pretesting indicated he could not distinguish left from right, so he evidently acquired this concept from his viewing.

When the same film test was given four months later, he scored 97%, the 3% drop due to the fact that he failed to respond once. Further testing on cartridge #19, six months after training films were viewed, restored his 100% accuracy rating.

When the multiple word approach presenting foods was shown, this subject's evaluation record showed a constant straight line at the intent interest level. Perhaps this material was a greater challenge to him or he may have matured sufficiently during the summer to have enabled him to maintain this high degree of concentration. He acquired an increased ability to lip read "food" words as his pretest rated 86% accurate and his final test 100%.

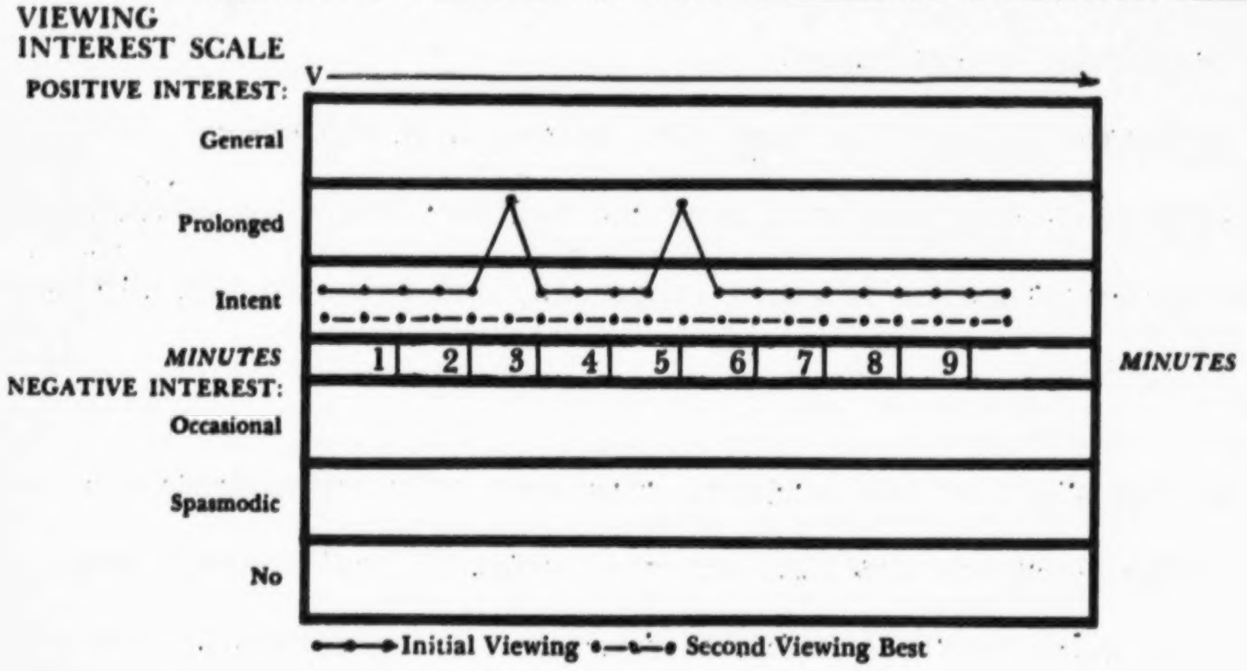
Case Study V

EVALUATION PROFILE

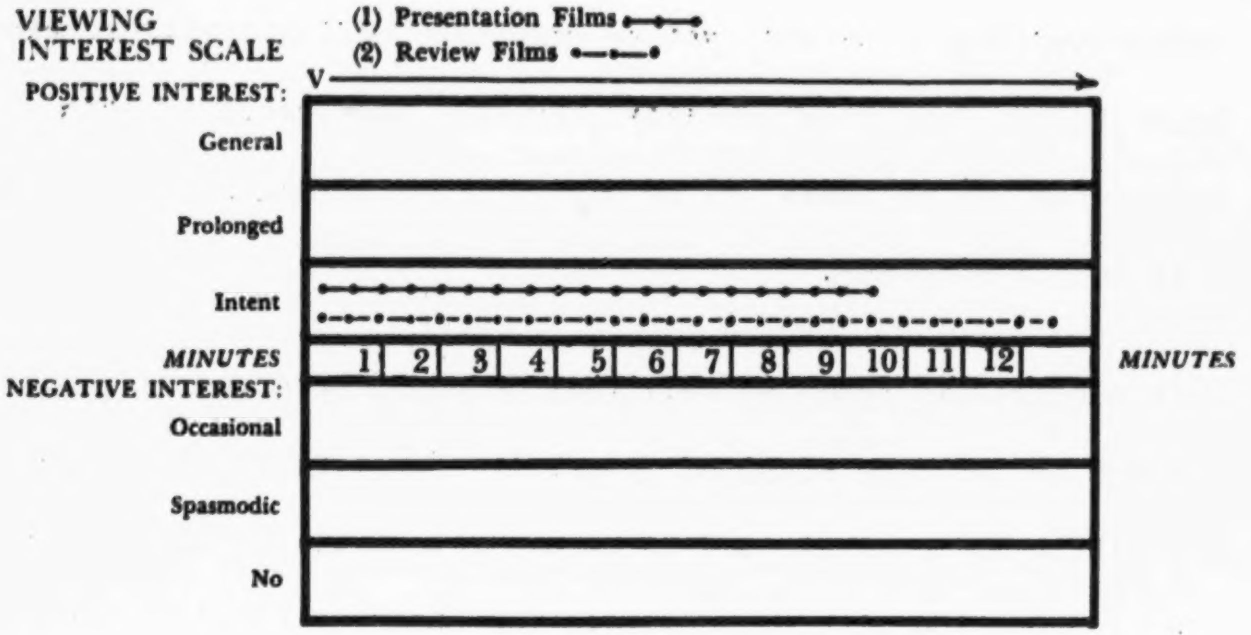
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO 20 NO. VIEWINGS 5 NO. EVALUATIONS 5

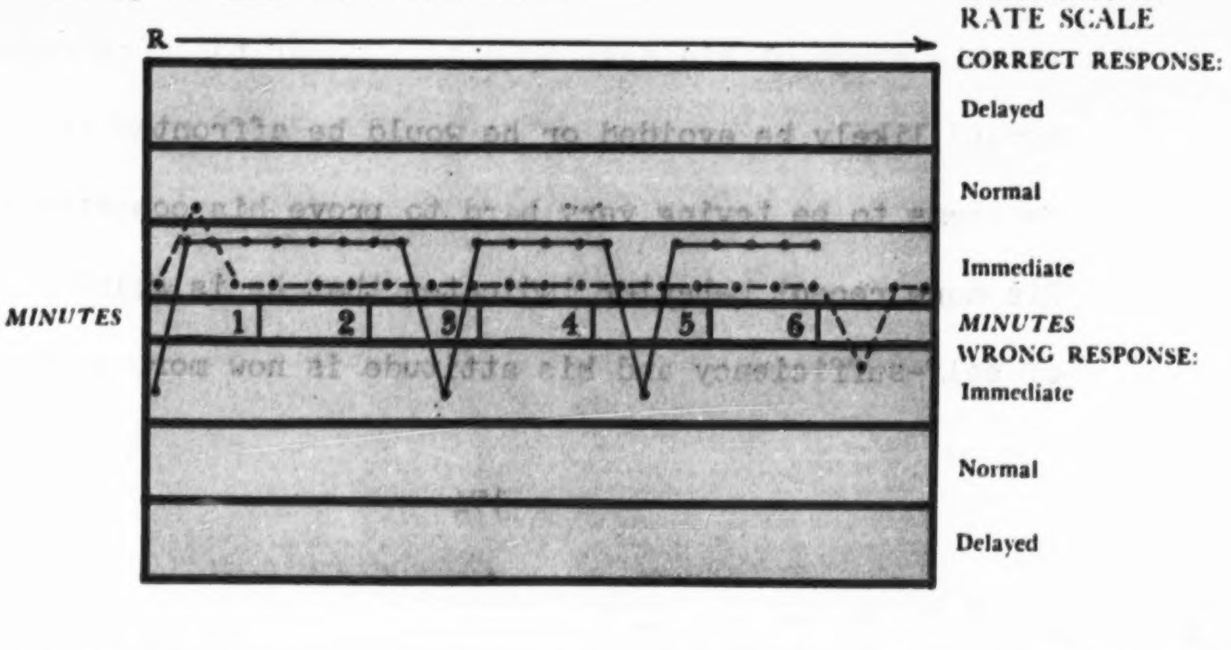


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher •—•—•
Cartridge No. 25 Different Film Teacher •–•–•



Case Study V (continued)

He scored 95% on film test #25, making only one error. His responses were made with care and deliberation. He watched for both words on the two-word responses, and selected the picture accordingly.

At the start of the project, sometimes this boy exhibited a rather careless attitude and once said, "I don't care," when told which shoe was being designated. He occasionally made faces at the screen and at his own reflection. His manner indicated a rather negative attitude, yet he responded well and with seeming pride in his "superior" ability. By fall all traces of this negativism had vanished and he was very deliberate and businesslike in his behavior.

This subject lip reads so well that he could progress very rapidly through use of more advanced material. However, should it prove too difficult he might tend to become resentful, as he does not take frustration with equanimity. The observer believes that the feeling of success that this child gains through mastery of the presented material has a very good psychological effect on him at this stage of his development. Use of too much repetition should likely be avoided or he would be affronted by it, since he seems to be trying very hard to prove his competency and worth. His more recent behavior indicates that he is gaining this sense of self-sufficiency and his attitude is now more positive.

CASE STUDY VI

Chronological Age: 7-4
School Achievement Level: First
Reading Level: Pre-primer

Audiogram May 1964

	250	500	1000	2000	3000	4000
Right ear	40	45	85	85	85	95
Left ear	70	70	70	95	-	-

Lipreading is adequate, auditory reception poor.

* * * * * *

This boy is 7 years, 4 months of age, and was a premature baby. He has a multiple handicap, having suffered a mild case of cerebral palsy which affected his legs. He wears braces on both legs, but can walk independently. His arms were not affected and he has a strong body.

He is well-adjusted socially, and enjoys playing with children or entertaining company in the home. He has a great desire for interaction with his schoolmates. He likes to tease them and has quite a sense of humor. He has two older brothers, but, according to his mother, has lacked for playmates his own age because of his multiple handicap which restricts his activities.

This boy especially likes building and mechanical toys, and enjoys using his hands. All types of television shows interest him, and he averages about an hour a day viewing time.

Case Study VI (continued)

This boy takes part in family activities and his father spends much time with him. The mother feels that the child has increased in independence since she started working, as this has helped her overcome her natural tendency to overprotect the boy.

According to the report of the examiner, utilizing the Nebraska Test of Learning Ability, this child operates at an "above-average" to "superior" level. He reasons well, using a deliberate approach, and has good memory and problem-solving ability.

In school, his achievement level is first grade and he reads in the pre-primer. His language ability is fair. Recently his lipreading ability has improved rapidly. He has attended school two and one-half years, with some previous training at the University of Nebraska Speech and Hearing Clinic and a summer at the John Tracy Clinic.

In viewing the project films he was easily distracted and was interested in the mechanical aspects of the situation. He sometimes repeated words. Some days he was much more attentive than on others; sometimes he seemed overstimulated or tired. He often adjusted the sound volume on the projector and enjoyed films more after learning to manage the controls. He appeared to benefit greatly from amplification of sound. He did not watch teacher's lips as closely as he should have for maximum lipreading results.

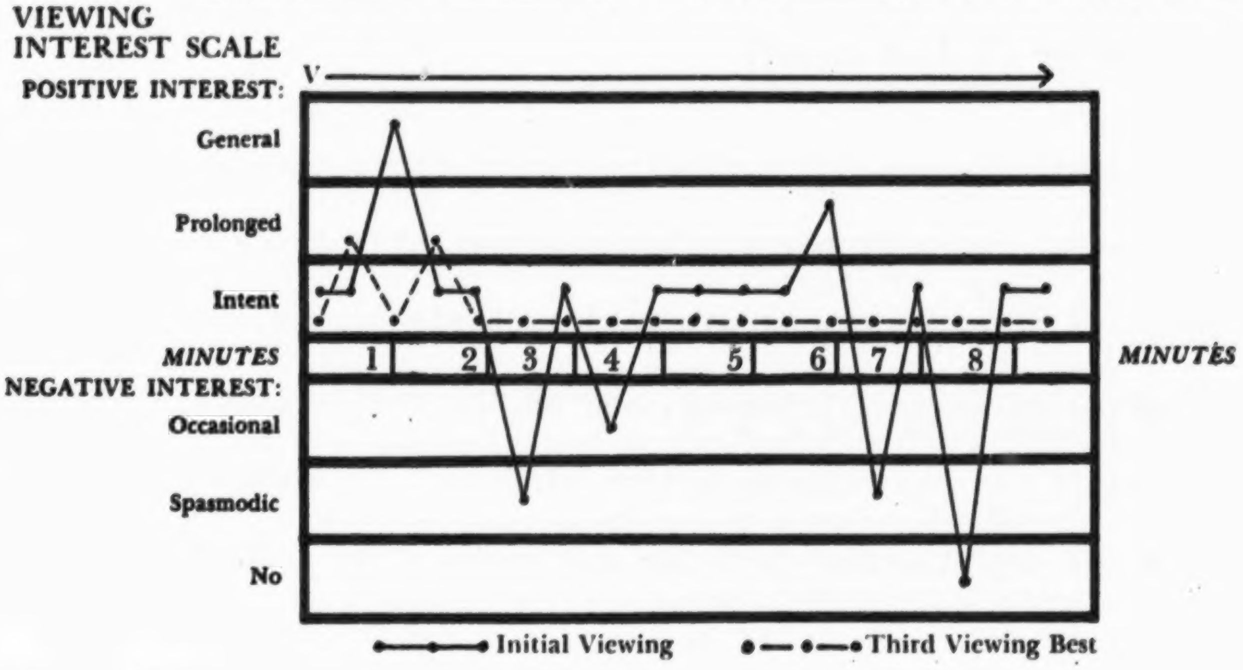
Case Study VI

EVALUATION PROFILE

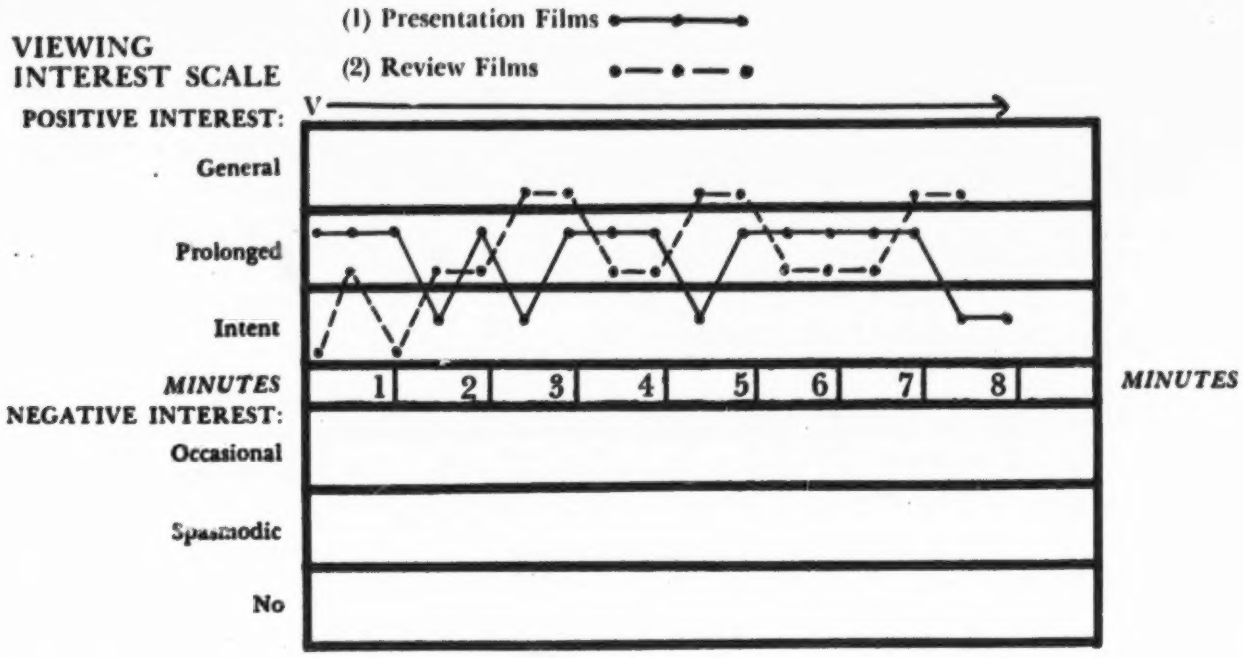
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 12 NO. EVALUATIONS 9



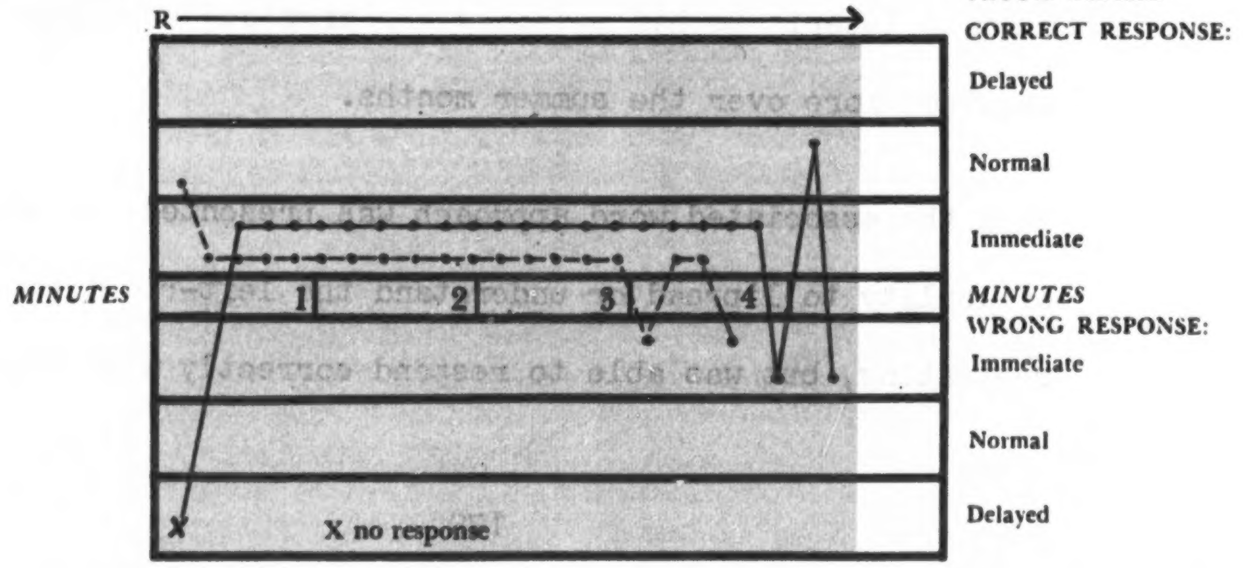
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher ●—●—●

Cartridge No. 13 Different Film Teacher ●— ● — ●



Case Study VI (continued)

This subject's composite viewing record shows some distraction occurring. Most of his viewing average held to the prolonged interest level on the single word emphasis series, but dropped at times to general interest, and on the review films to occasional interest. He has such an active mind that he tires readily of material that becomes familiar and seeks other outlets for his curiosity and energy. If he becomes bored he sometimes plays games with himself or makes faces.

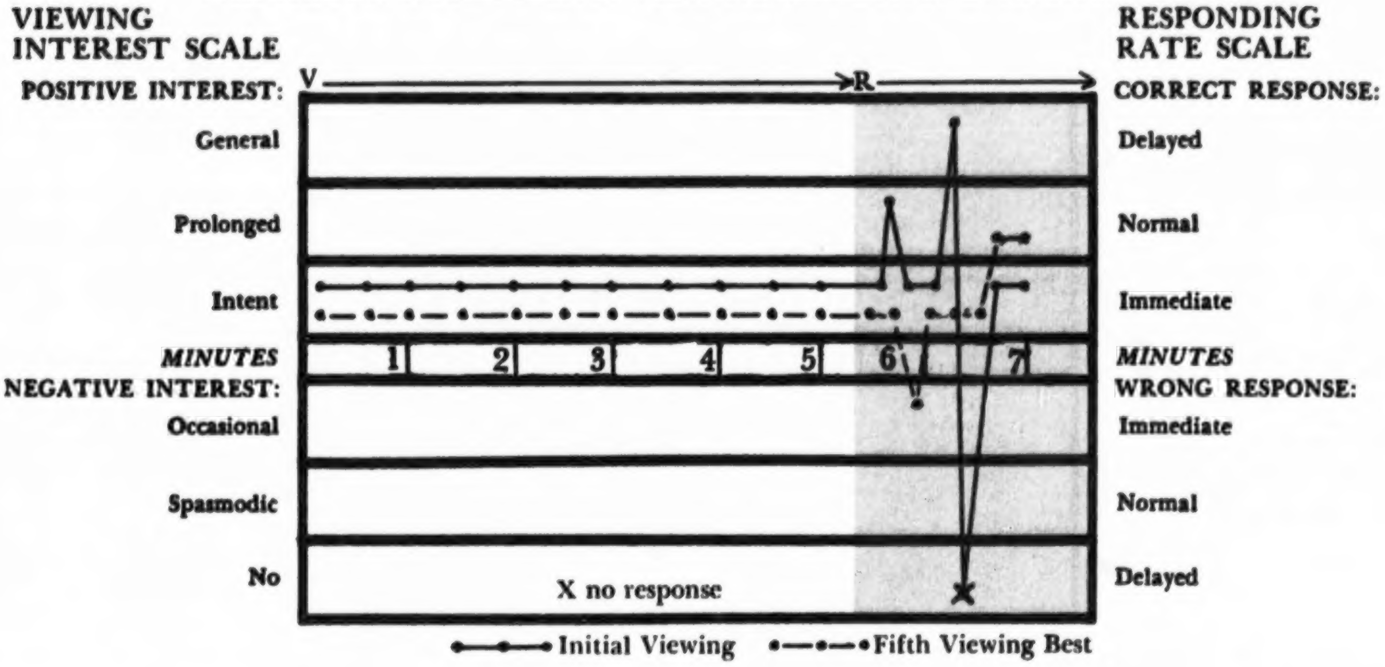
A high rating of 96% on the single word response films indicated that the words had been learned well even though some inattention occurred. The subject grasps material quickly and does not require a great deal of repetition. The response films presented a challenge. He watched them intently, taking great pride in making correct responses. He did equally well without earphones. In testing without cues on cartridge #12, he scored 20 right out of 23, or 87% correct. This indicates satisfactory lipreading ability on the tested words. Five months later he made a 91% rating on the same film test, and scored 90% on test #13, given a month later. He had retained his previous knowledge and perhaps acquired more over the summer months.

When the associated word approach was presented, he showed lack of ability to lipread or understand the left-right concept on pretesting, but was able to respond correctly when teacher gave

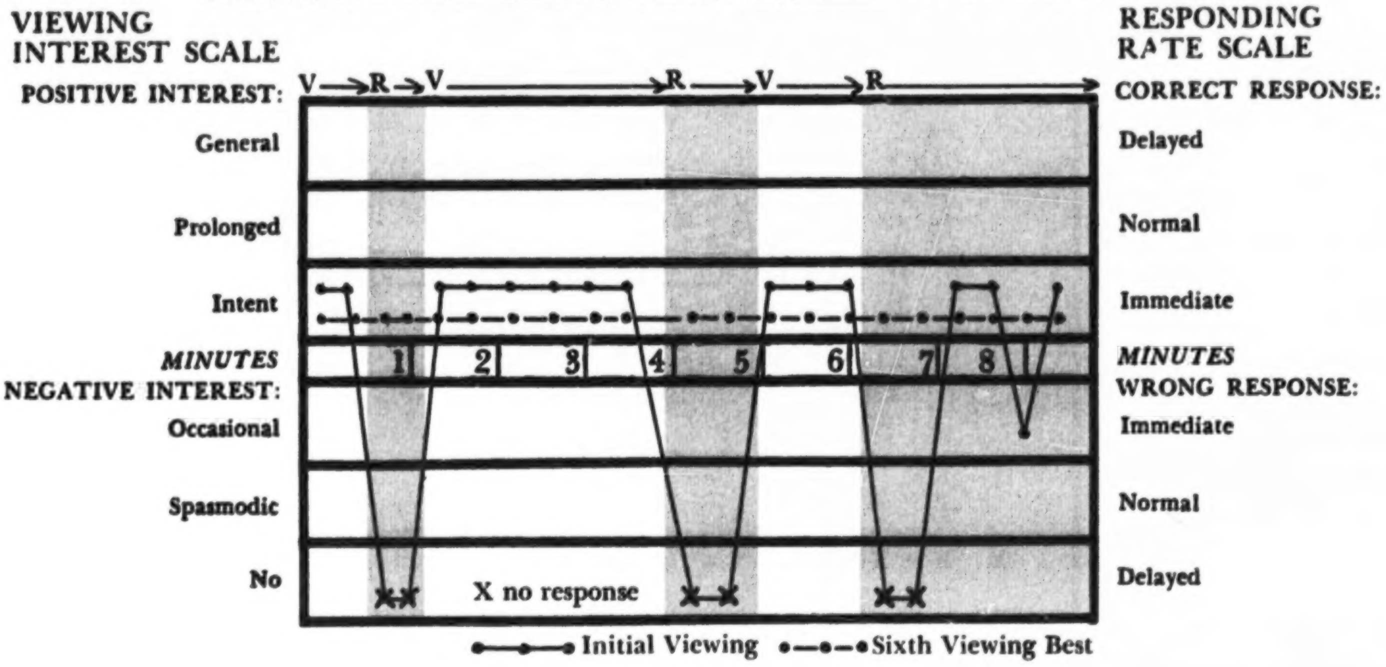
Case Study VI
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

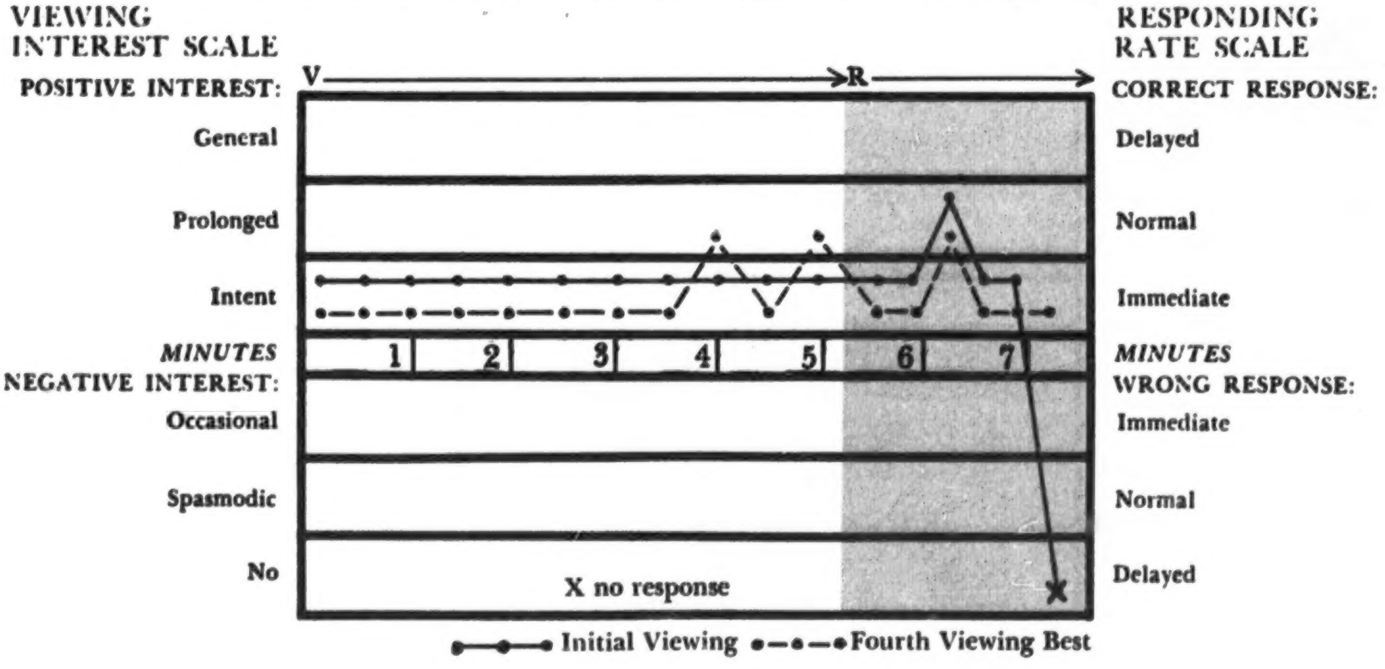
CARTRIDGE NO. 14 NO. VIEWINGS 8 NO. EVALUATIONS 3



CARTRIDGE NO. 15 NO. VIEWINGS 6 NO. EVALUATIONS 2

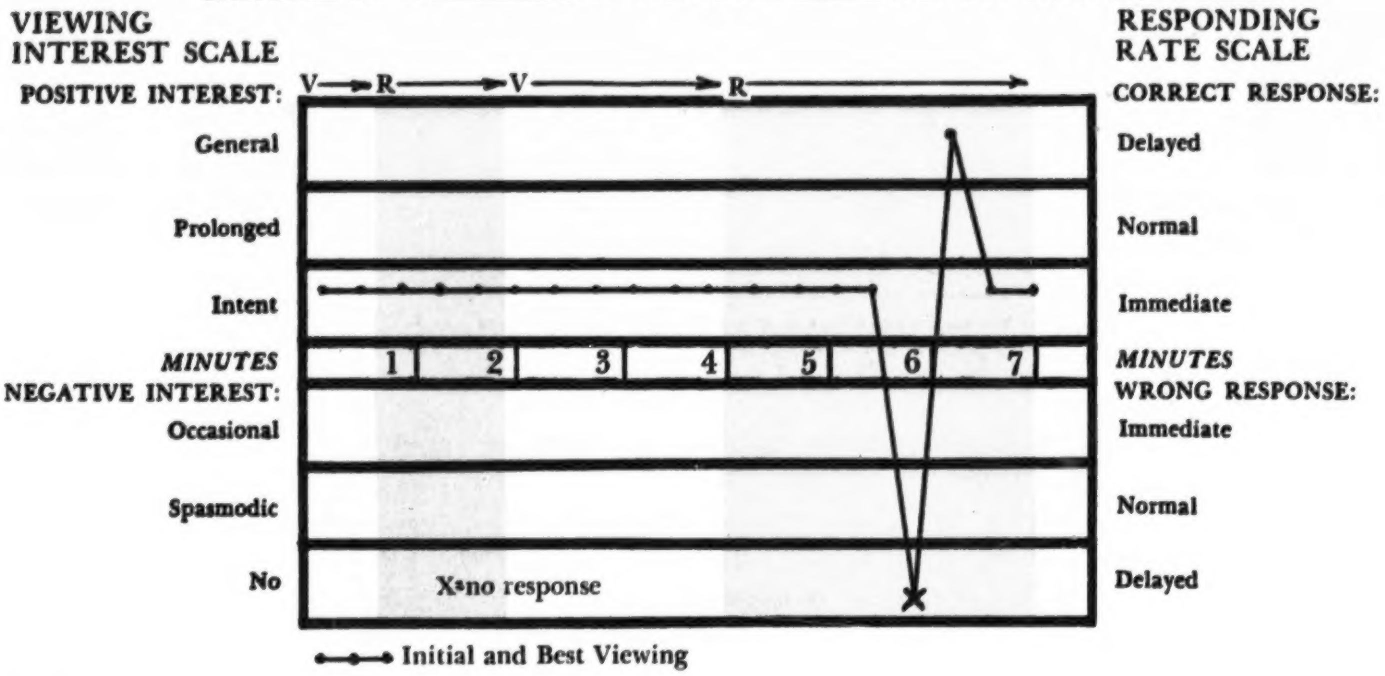


CARTRIDGE NO. 16 NO. VIEWINGS 7 NO. EVALUATIONS 4



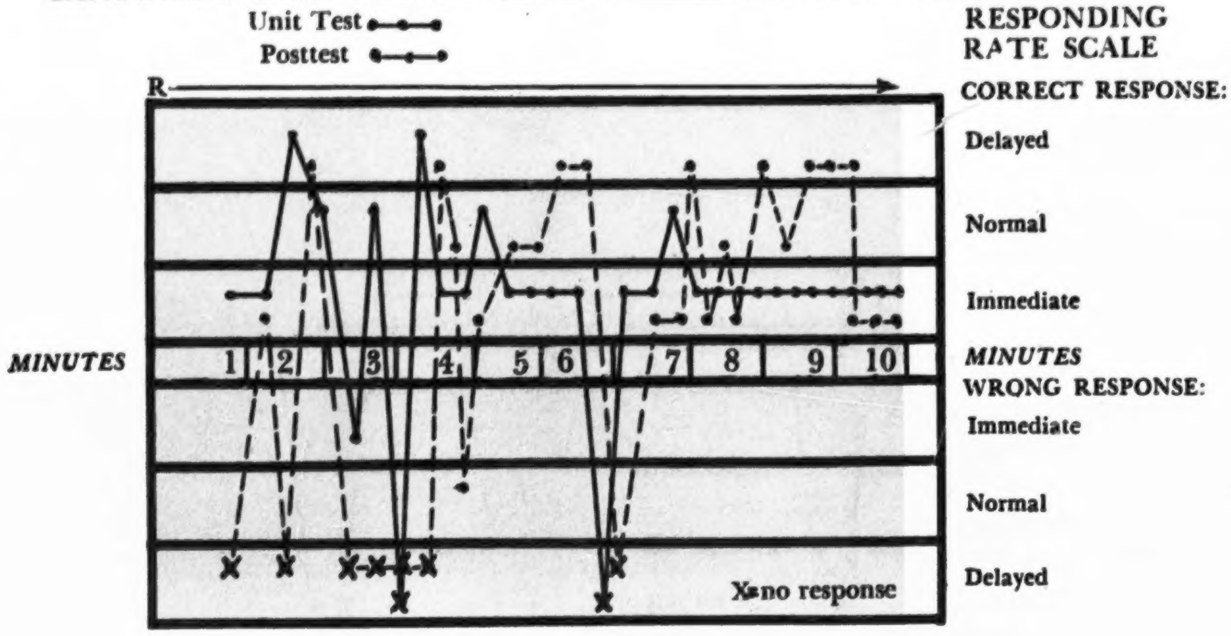
Case Study VI
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 7 NO. EVALUATIONS 3



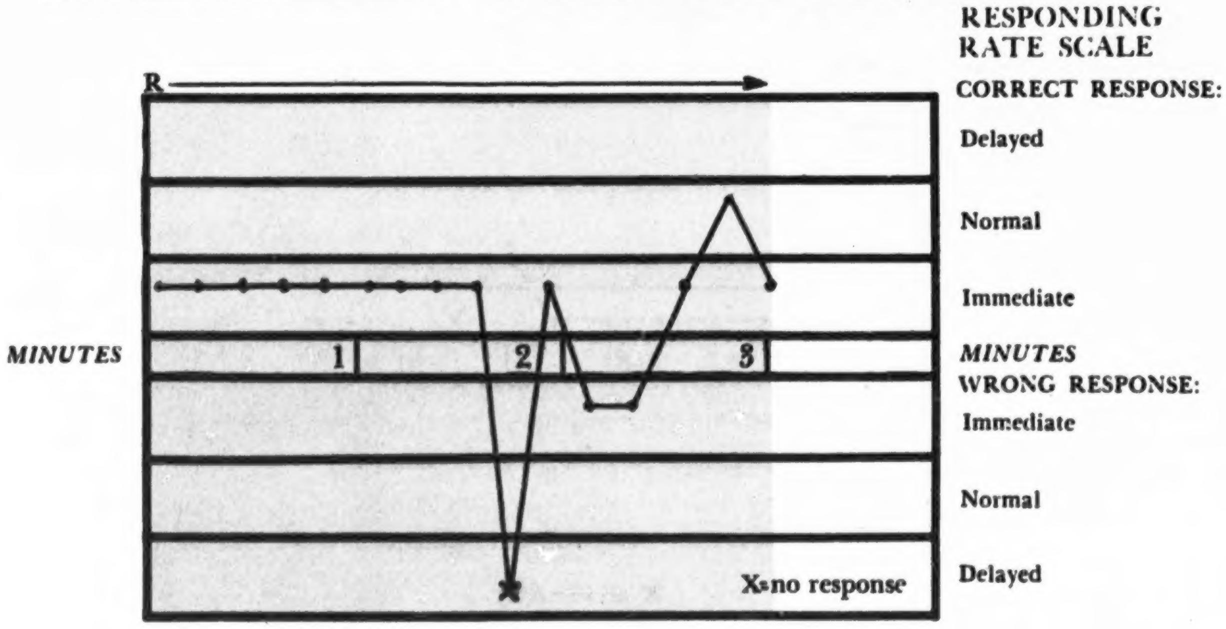
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



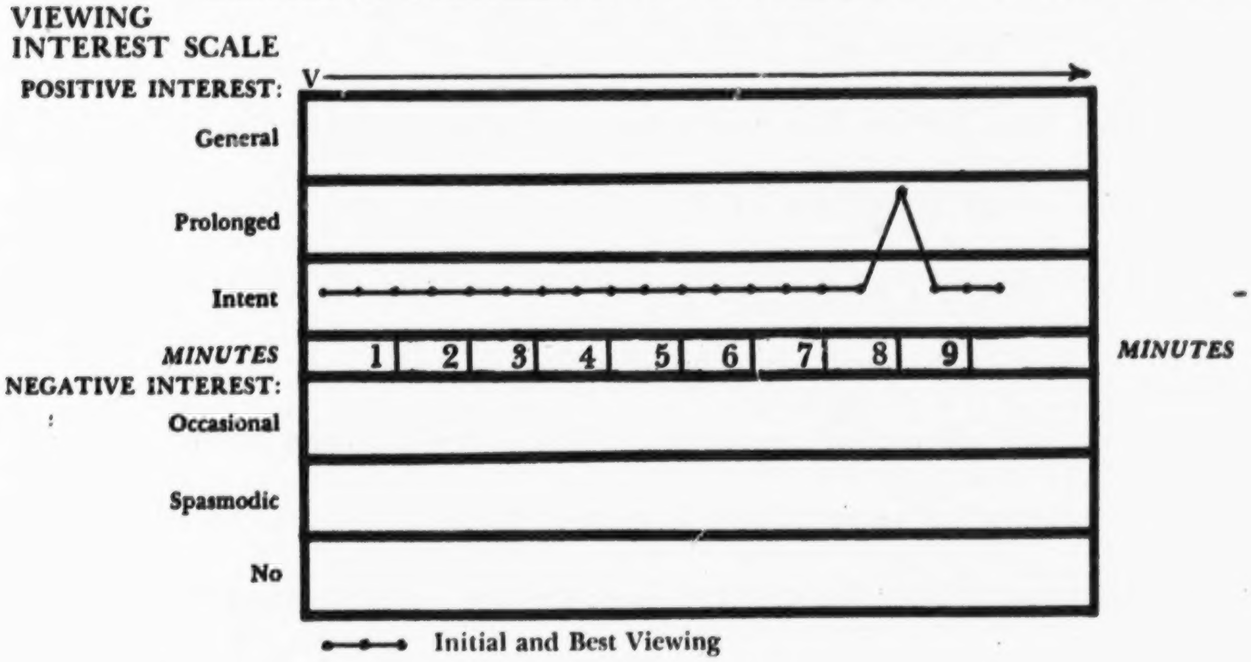
a follow-up test after the training period. Apparently he learned the words from use of the film. He seemed to have gained readily the concept, also. He had a 79% rating on the training films due to two things: responses missed due to inattention, and several "no response" ratings. These took place during initial viewings of cartridges #14 and #15. At first he did not respond to some directions until nearly the end of cartridge #15, but was able to make correct responses after viewing it several times. The observer believes that some of the auxiliary words in the directions were not understood by him.

He raised his score to 90% on the final test over the left-right concept, indicating a good growth in understanding and lipreading ability. When the microphone was used, this boy was very excited to hear his own voice and repeated words over and over. He has a good score on response thereafter, especially enjoying the use of the push-button lighted box in the end of unit film test. Four months later his score on the same film test #18 dropped to a disappointing 69%. This was not due to errors in response, but due to lack of response. He was inattentive and was not watching screen when words were spoken. He made very few errors when he was concentrating. A test (#19) over left-right and use of the projector was given two months later and he scored 81%. The words "on" and "off" accounted for some errors here. He responded correctly each time when requested to hold up left or right hand.

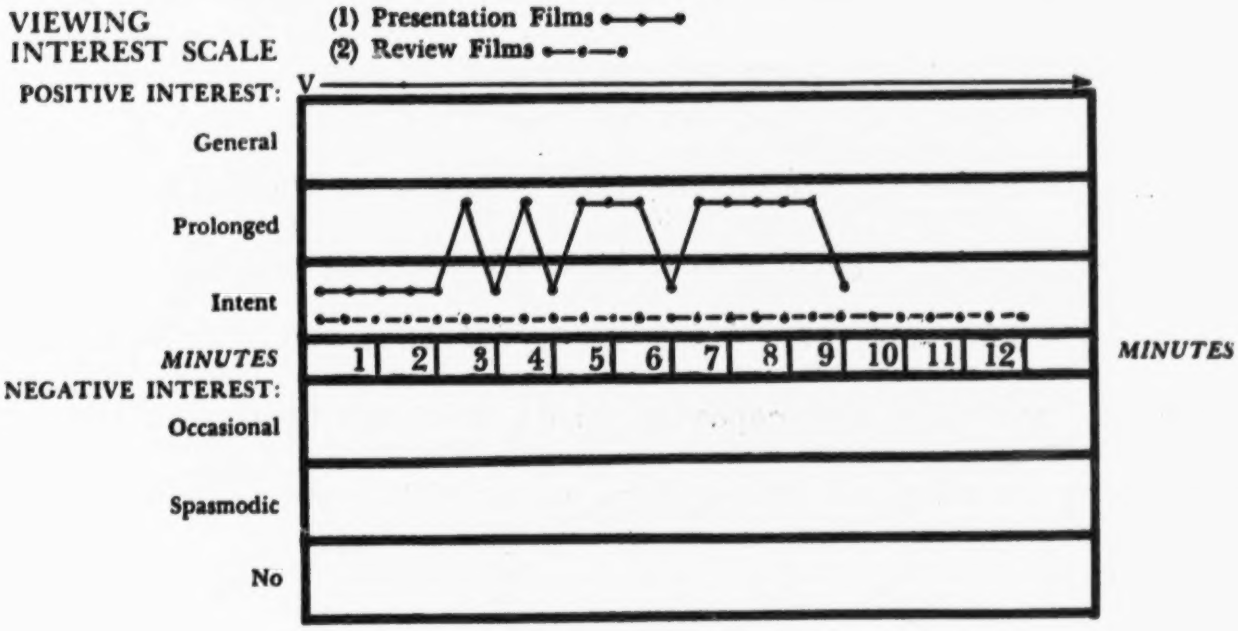
Case Study VI
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO 20 NO. VIEWINGS 8 NO. EVALUATIONS 8

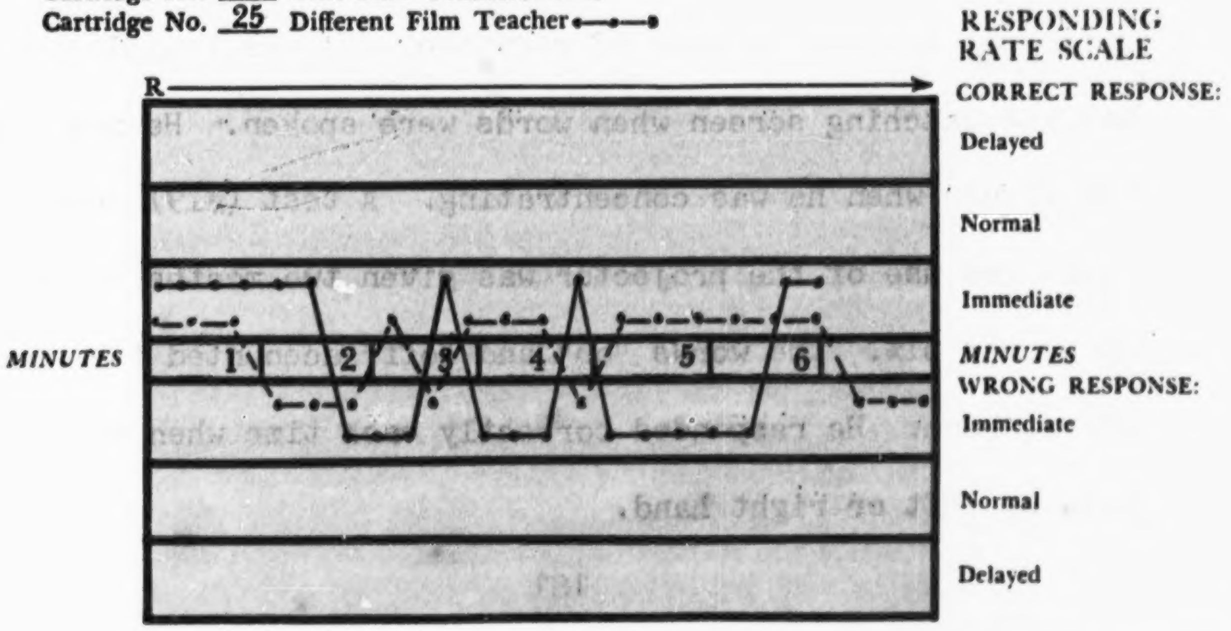


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher
Cartridge No. 25 Different Film Teacher



Case Study VI (continued)

When the multiple word food films were presented, the evaluation record for Case Study VI showed interest maintained at the prolonged to intent level. His interest was higher on this series than it had been on the single or associated word series. This improvement may be due to an increased maturity as this boy seems to be more eager to acquire knowledge than formerly and is less inclined to play in booth. This series may have been more of a challenge also as his pretest over this material showed a 48% rating. It is believed he really knows more of the "foods" words than this score indicates, though, as he circled pictures in the test booklet at random. The directions may not have been clear to him as he watched the screen, then circled any illustration and seemed satisfied that his duty was fulfilled! Further evidence of this confusion occurred when he took final film test #24 and again responded with this random circling, being only 29% accurate. When later asked to circle certain foods by his teacher he was able to lipread more words than indicated by the score.

On follow-up test #25 the subject achieved a 62% rating. On this test he was obviously trying to find the right picture, but was a bit nervous and sometimes hurried too much, and did not catch the second word given. He had learned to think and discriminate, however, which is a valuable lesson in itself. This 62% is probably the truest rating of the two. Although lower than his tests over the first two series, this material was more difficult and may have had too many auxiliary words for mastery by a boy of this level of lipreading ability.

The observer believes that much progress could be made by this child in viewing films in the future, as he has improved greatly in lipreading ability in the past year. As he learns the auxiliary words used he will be able to grasp material even more quickly; also development of more maturity should help him to become less distractible. He has already exhibited improvement in this direction. He requires much new and challenging material to hold his attention as he learns readily and is bored with repetition. His interest is maintained better when he is allowed to participate by use of response techniques. Since his improvement in lipreading ability he apparently has more of a sense of purpose in his work and tries harder to achieve perfection. He likes to feel a sense of command in a situation and often forges ahead when he should slow up his pace and concentrate. Educationally, it will probably be difficult to find material interesting to him, yet geared to his level of lipreading. As soon as his lipreading skill catches up with his thought processes, he should make rapid achievement.

Chronological Age: 7-5

CASE STUDY VII

School Achievement Level: First

Reading Level: Primer

Audiogram May 1964

	250	500	1000	1500
Right ear	65	75	90	95
Left ear	60	75	90	100

Response to auditory clues adequate, considering the severity of the loss. Lipreading ability is very good.

* * * * * *

This very interesting boy of seven years, five months has a multiple handicap. He was an RH baby and suffers from cerebral palsy and a profound hearing loss due to nerve deafness. He has constant spasmodic movements which vary in intensity depending on the degree of fatigue or stimulation.

He is very outgoing and enjoys group play but often stands back in an attempt to comprehend what the other children are doing. He cannot take part in many adult situations, such as church, as he has not developed good control of either his movements or emotions and has occasional temper tantrums. The mother, a former teacher, had instructed the child prior to school enrollment and he was an excellent lipreader when he entered the class.

Television holds little interest for him and he seldom watches. He prefers building toys, reading and playing with cars. His vocabulary is extensive but unintelligible. He is easily distracted and cannot stay long at a task or he becomes careless. He works best in isolation.

On the Nebraska Test of Learning Ability he fell within the "low average" range of deaf children with whom he was compared, probably rating two to six months below his age. However, the test could not be completed due to fatigue caused by his neuromuscular involvement.

In school this boy is at the first grade achievement level and reads in the primer. He has been in school two years.

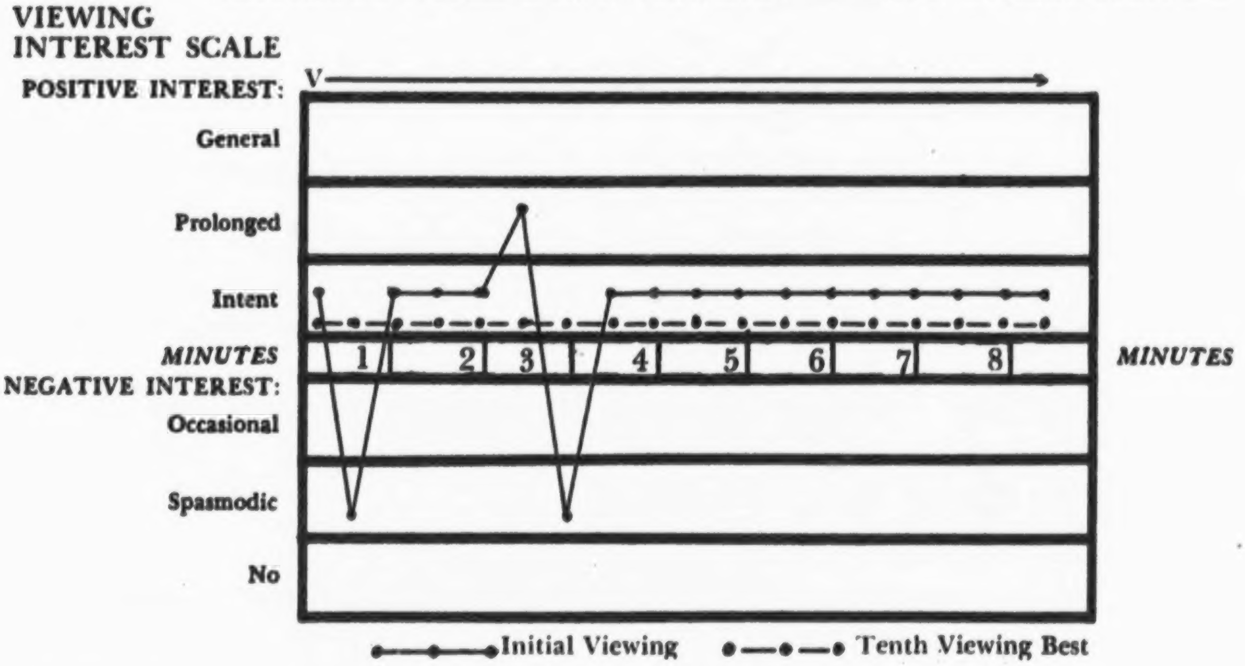
Though not a TV fan, when viewing the project films he was a very attentive boy. He weaved constantly due to cerebral palsy, but his eyes seldom left the picture. He was always delighted to see his teacher on film. He often smiled, clapped and nodded during viewing. He repeated words and was a good lipreader. He watched the teacher's face and once held his hand to film as though to "feel" the sound as he had been taught. He operated the machine in spite of muscular difficulties but had difficulty managing earphones.

In viewing the single word emphasis films, both presentation and

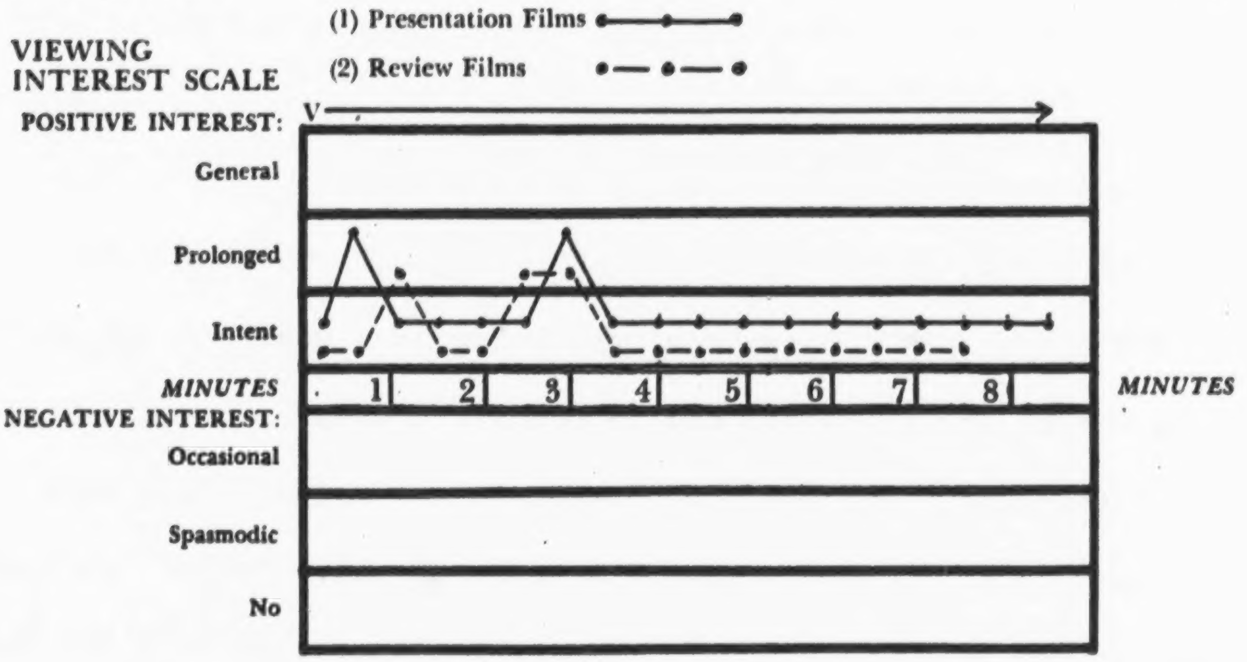
Case Study VII
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 13 NO. EVALUATIONS 10



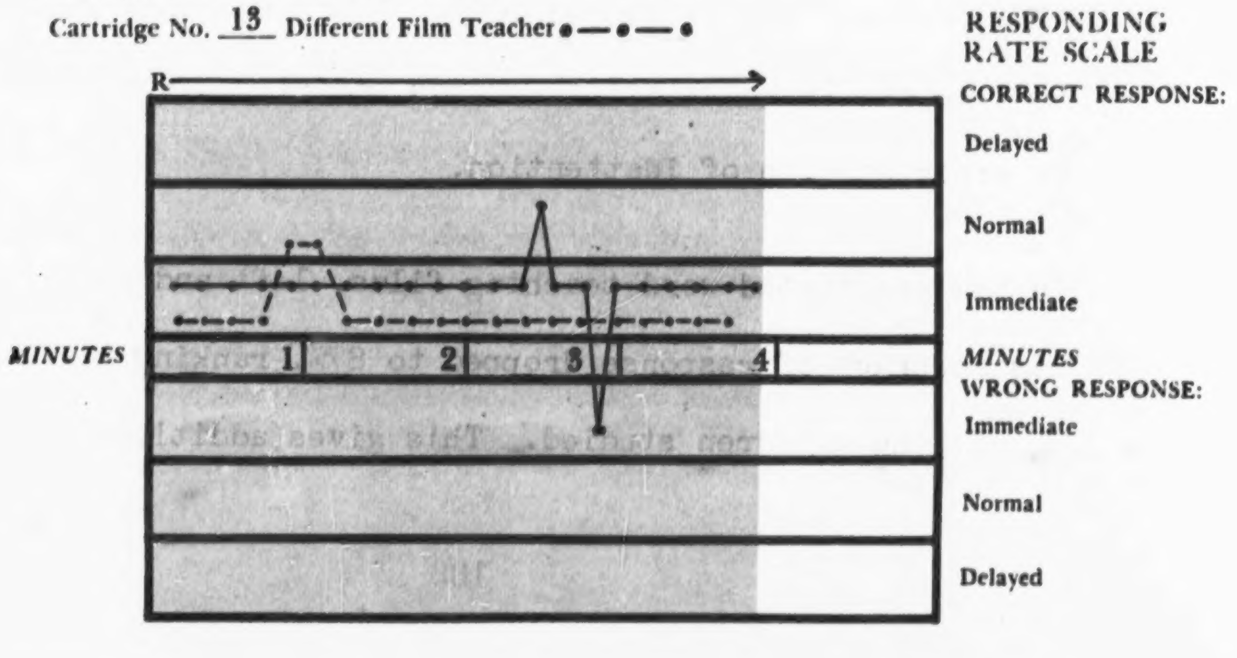
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher ●——●——●

Cartridge No. 13 Different Film Teacher ●—●—●



review forms, this child maintained an intent interest level except for two drops during the "car" film and the "car-ball" review. Though he suffered from many spasmodic movements, he never seemed to tire of watching his teacher perform and frequently expressed his pleasure.

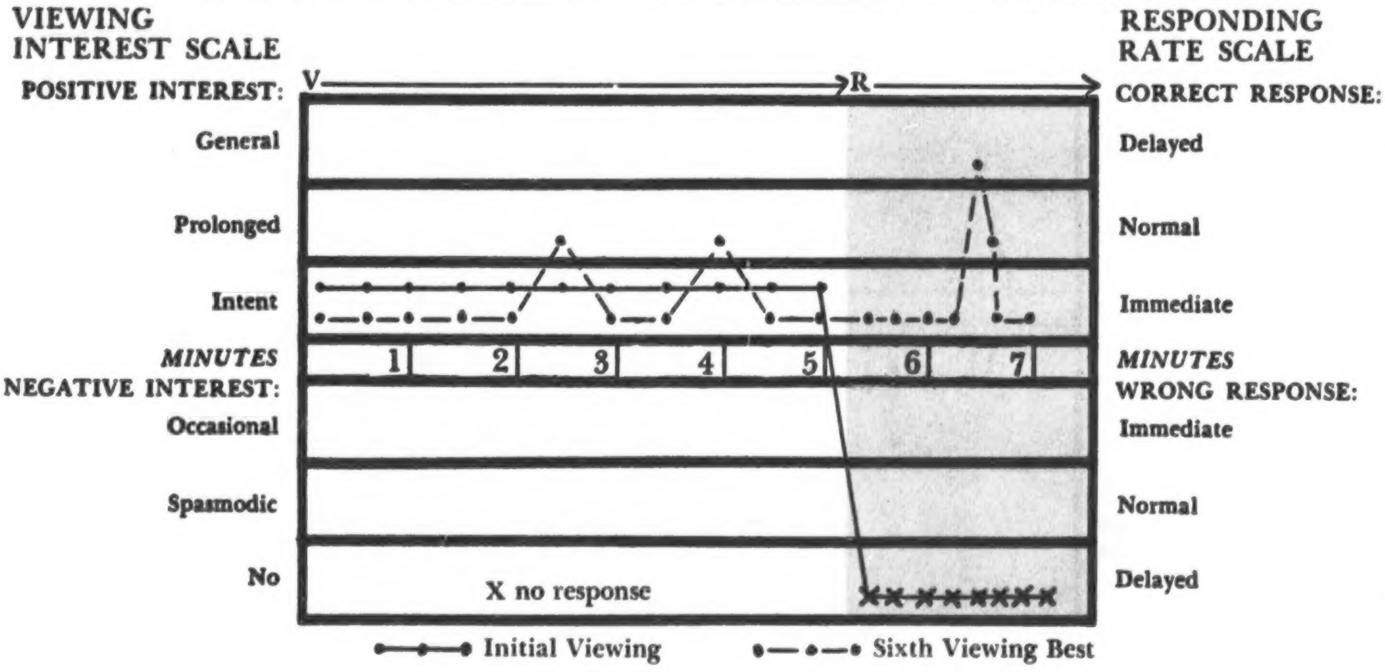
The response films showed an accuracy rating of 99%, which is surprising in view of the fact that this subject has such great difficulty with muscular control. (Sometimes he had difficulty placing the objects where he wanted them.) However, he lipreads well and his ability to concentrate in the viewing situation enables him to learn rapidly. In testing with no cueing he missed only 1 of 23 responses, resulting in a score of 96% correct. This was on cartridge #12 and no sound was used. Five months after teaching films were presented, he was tested again with the same film test and achieved a score of 91%. He had retained most of the material learned. One month later film test #13 was administered, covering the same words, but presented by a different film teacher, and he scored 100%. These combined scores indicate that he really knows all the words taught but sometimes makes an error because of inattention.

In the associated word teaching films, left and right concept, his accuracy of response dropped to 87%, ranking him third high of all the children studied. This gives additional evidence of

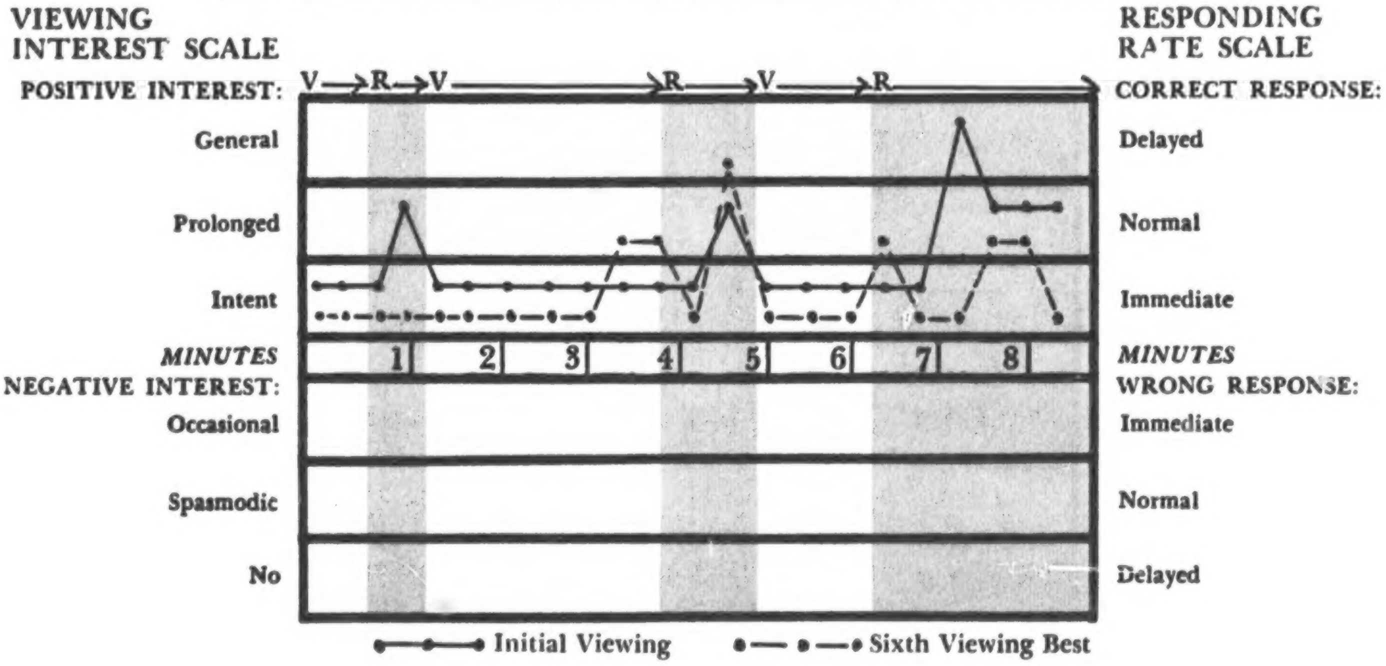
Case Study VII
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

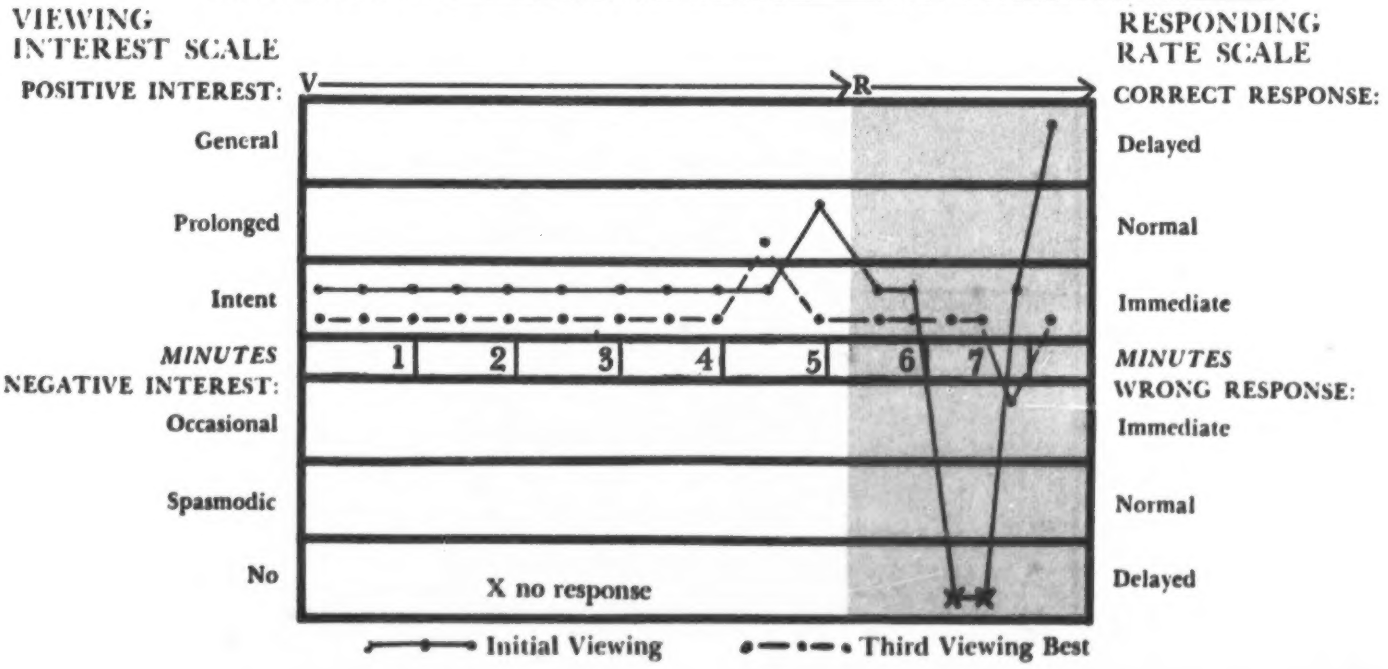
CARTRIDGE NO. 14 NO. VIEWINGS 6 NO. EVALUATIONS 4



CARTRIDGE NO. 15 NO. VIEWINGS 6 NO. EVALUATIONS 3



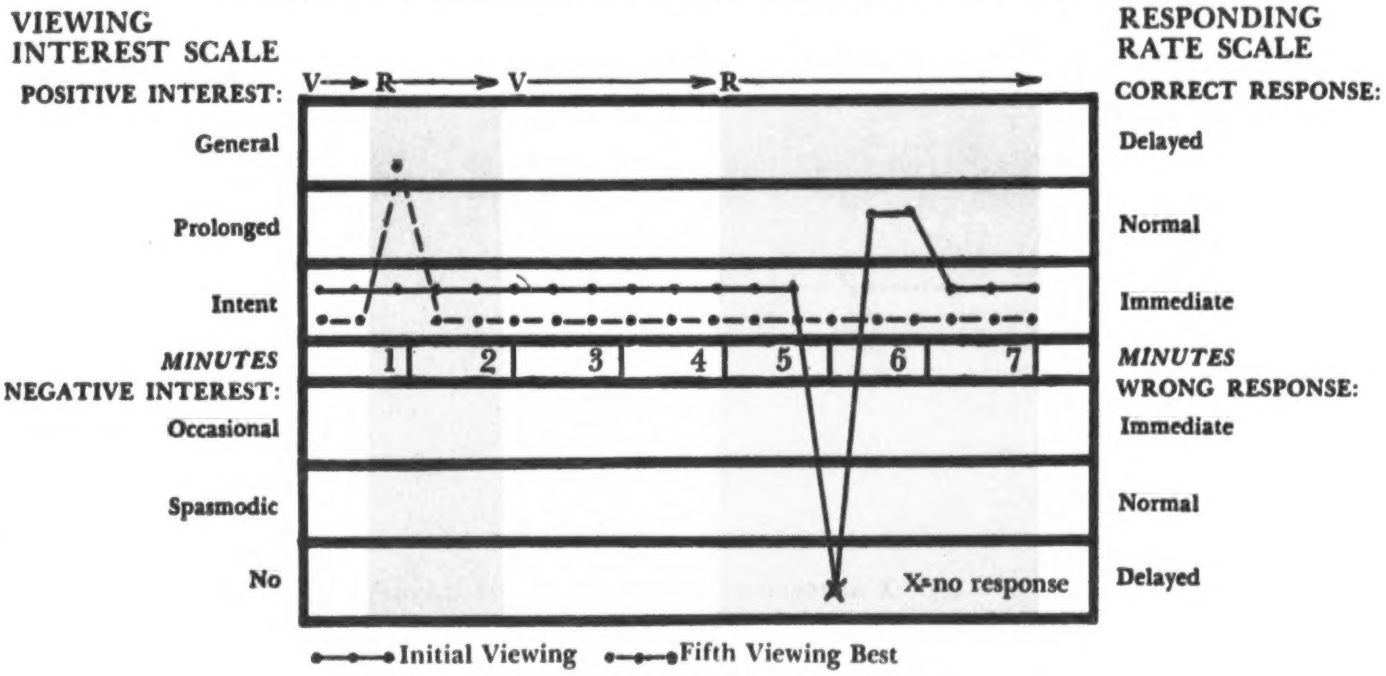
CARTRIDGE NO. 16 NO. VIEWINGS 7 NO. EVALUATIONS 4



Case Study VII

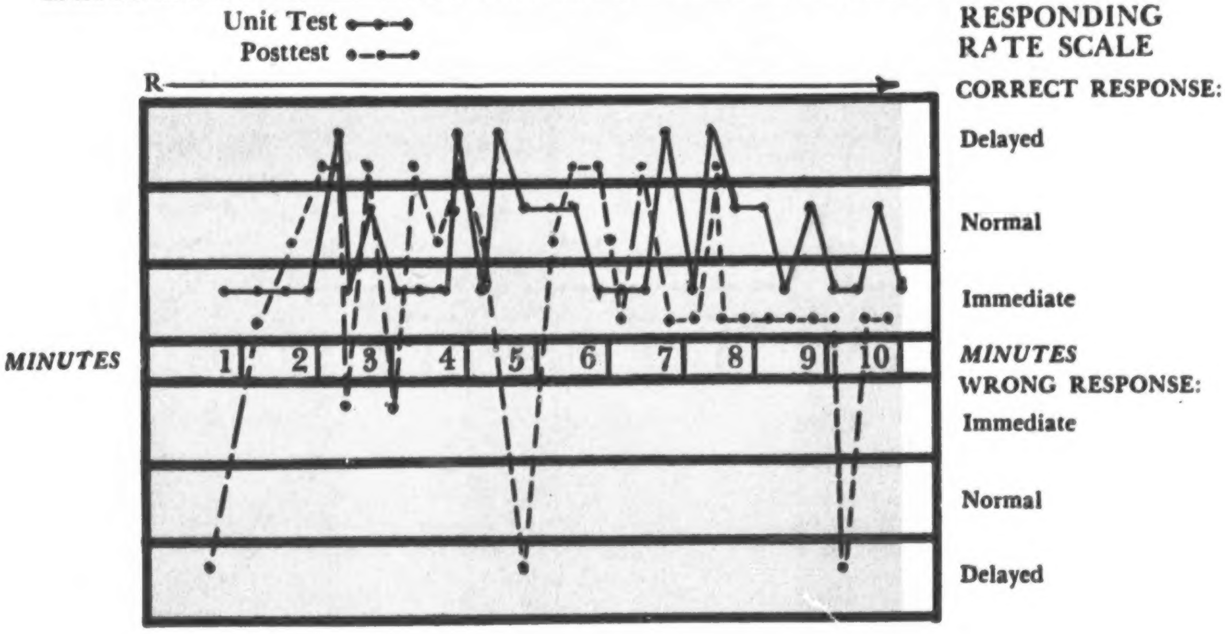
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 8 NO. EVALUATIONS 3



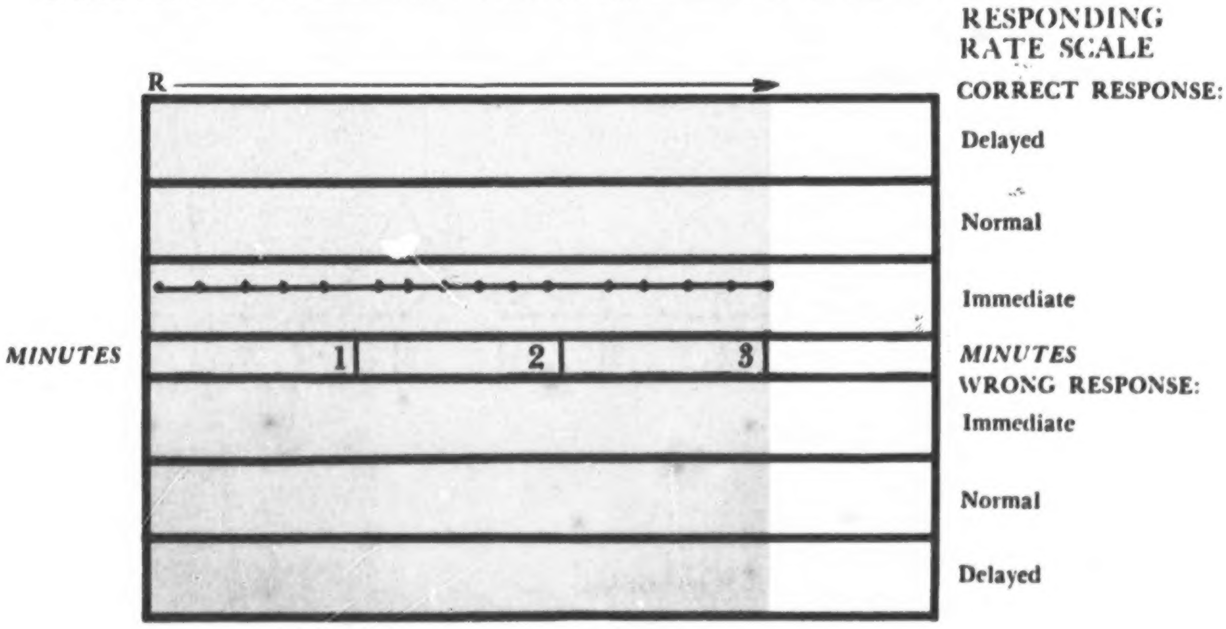
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



his excellent lipreading ability. He would have ranked higher except for 14 instances when he failed to respond. On the first left-right film he did not understand that he was supposed to respond. After having this explained, he performed perfectly. During the learning portion of this film, he was not as attentive as when viewing the earlier films. The more abstract nature of this material may account for this fact, as this boy is considered to be average or less in intelligence. This slight drop in interest was repeated when viewing the other left-right films. Nevertheless, his attention never dropped below general interest.

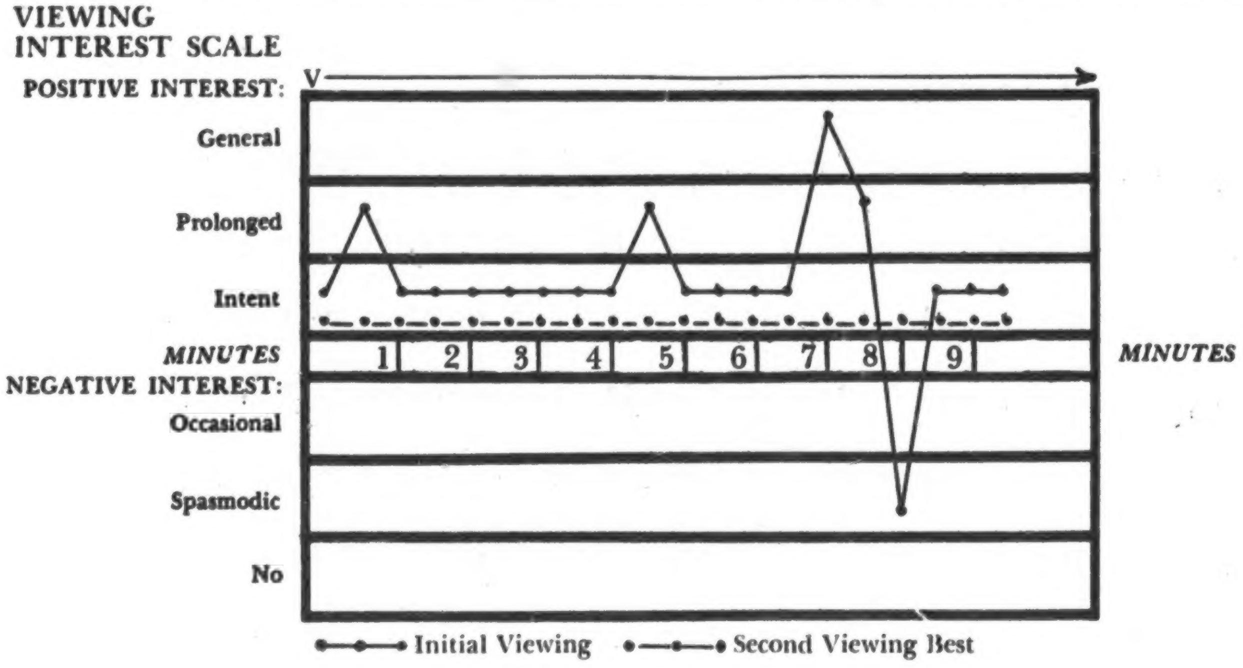
On taking the end of unit film test over the left-right series, he scored an astounding 100%, indicating he had been able to learn the words and fully comprehend the difficult concept. This causes the observer to suspect that his intelligence is greater than current tests for the hard of hearing indicate. In spite of his motor impairment this child was able to push a button to indicate desired response.

When the same film test #18 was administered four months later, his score dropped to 84%. It was assumed that he had lost some of his previous learning, but such was not the case, as when test #19 was given, the boy amazed us by scoring 100%. It was pleasing to note that in spite of his great handicap this subject was able to manipulate the controls, hold up the proper hand, and

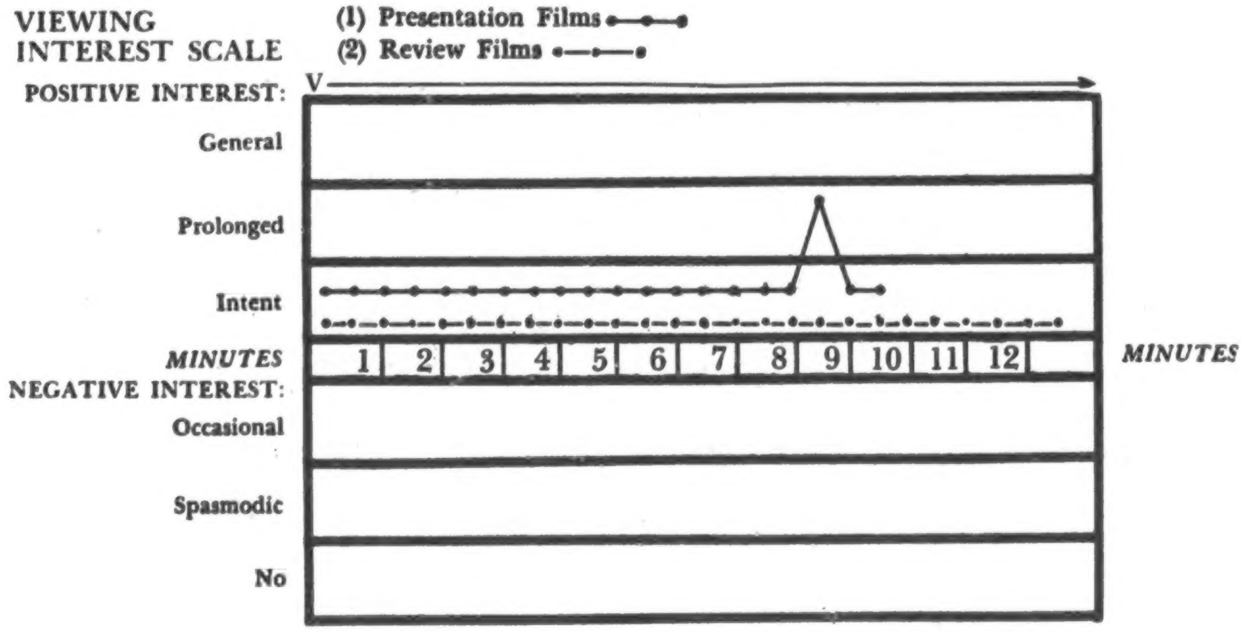
Case Study VII
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 5 NO. EVALUATIONS 5

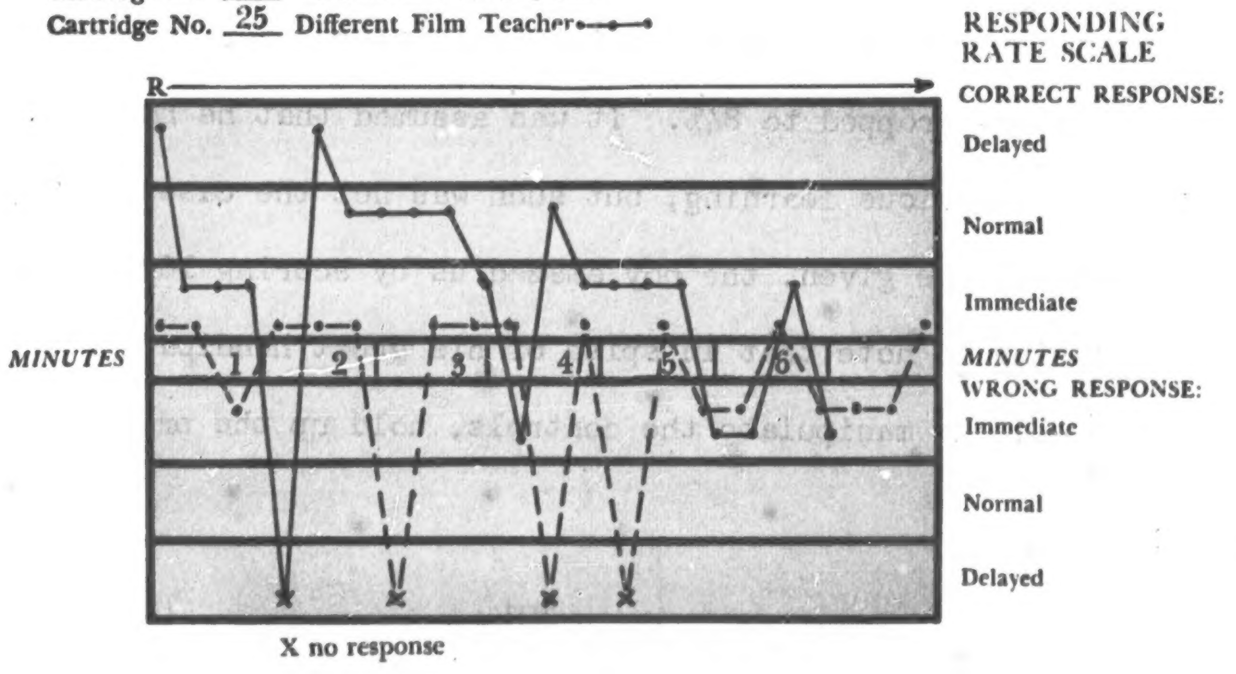


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher ●—●—●
Cartridge No. 25 Different Film Teacher ●—●—●



to control his random movements enough to be successful in his endeavor.

When the multiple word food series was presented, the evaluation record shows attention held at intent interest except for one drop to prolonged interest. Unless he dropped a pencil, this subject's eyes rarely left the screen. Pretesting over the foods vocabulary gave a 76% rating. The end of unit film test (#24) showed the identical rating. During this testing period, however, he dropped his pencil, causing him to miss one response, and failed to see second word on some two-word requests. Test film #25, using a different sequence of words presented by his own teacher, showed a drop to 57%. Five times he erred by seeing only one word of two-word requests, indicating he is quick to follow cues but does not wait for additional information. His random movements were very noticeable during this test, and he had to leave booth for restroom during film viewing. Further testing is needed to determine if no progress was made or if the subject happened to be tested on days of poor motor control. He had viewed the training films most attentively.

This child has been a surprise to the observer. Since his home TV viewing is nil, it was assumed that he would be quite inattentive. Just the opposite has proven to be true. There may be many reasons for this. He was pleased to see his own teacher on film and is capable of learning and understanding the material presented. Since he can participate at times he can identify himself with the picture "plot" and gain a sense of mastery in this situation. This sense of accomplishment is needed by him but is probably rarely experienced. The quiet time spent viewing by him is a good break in an active school day. Some days his spasmodic movements lessen and he becomes more tranquil while viewing the films. The films seem to have some therapeutic value for this boy. One day when he was having an especially bad time with his teacher (he can be very trying), he entered the booth and became very docile and eagerly responded to the films with his usual degree of enjoyment.

As long as material is presented that is within his present powers of comprehension, this boy should be able to learn much new material very rapidly, as he has high motivation, and lipreads excellently.

Chronological Age:	7-6
School Achievement Level:	Second
Reading Level:	Second

CASE STUDY VIII

Audiogram May 1964

	250	500	1000	2000	4000	8000
Right ear	65	70	80	75	100	80
Left ear	60	60	85	90	85	N.R.

* * * * * *

This case is an attractive, alert girl of seven years, six months. The cause of her handicap is unknown. It was reported that she said words at one year, then her speech seemed to regress. She has a profound hearing loss, with some residual hearing.

Group play is enjoyed by this child and she has many friends. She is not withdrawn and seems to understand her playmates. She functions very effectively due to her eagerness and alertness and has enough hearing to gain cues. The mother is a former school teacher and used the John Tracy Course to train this girl prior to school enrollment.

This child especially enjoys playing outdoors and working with her hands. Her television viewing averages about two hours a day. She does not care for musical programs. If television sound is off she asks what is wrong although she cannot understand the words.

Case Study VIII (continued)

She enunciates well and her speech is mostly understandable. On the Nebraska Test of Learning Ability she showed good insight, reasoning, and problem-solving ability. Her memory was noticeably above average. She rated one and one-half years above her chronological age level when compared with deaf children her own age. When the examiner compared her on a second basis with hearing children she also rated above average.

School achievement and reading ability place her at second grade level. She has been in school two years and six months.

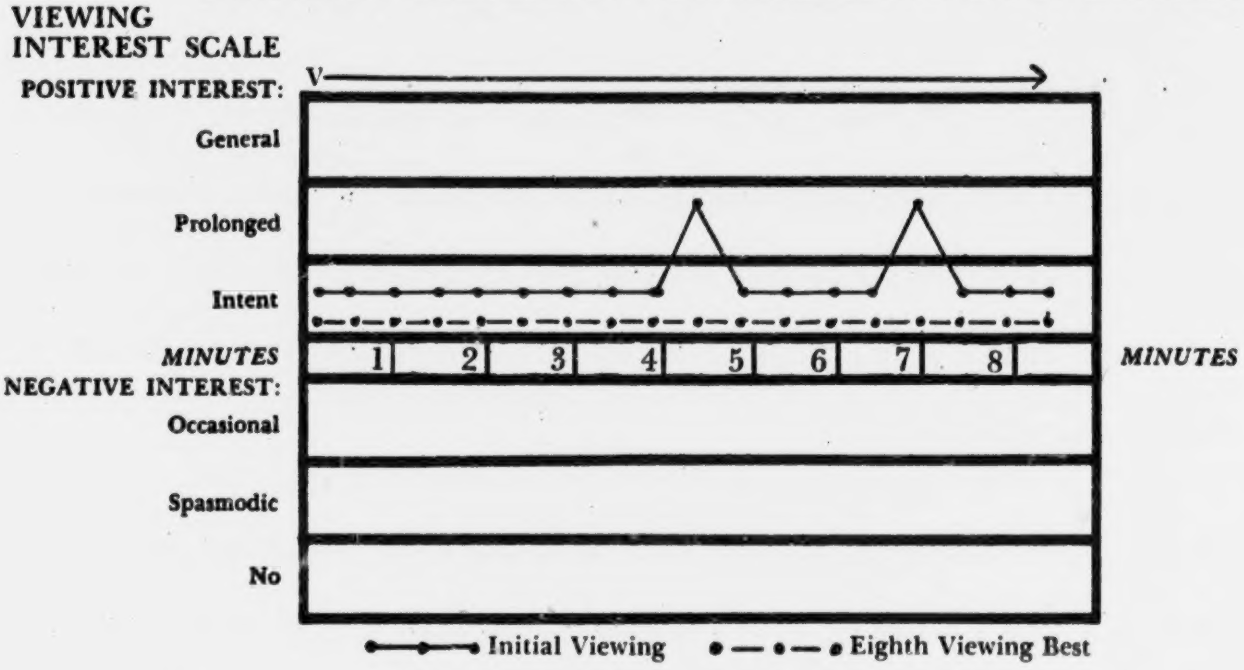
In viewing project films she watched the teacher's face a great deal and studied her lips. She was usually attentive during the first viewings, but her attention sometimes wandered after one viewing. She verbalized occasionally and lipread well. She sometimes liked to emote in mirror and expressed great delight in material that especially appealed to her. She usually adjusted volume.

On the single word emphasis films, her attention was held at the prolonged to high interest level. Slight distraction took place after about one and one-half to three minutes of viewing, except on the film concerning dolls. There was somewhat more distraction on the review films. This material was probably too elementary for

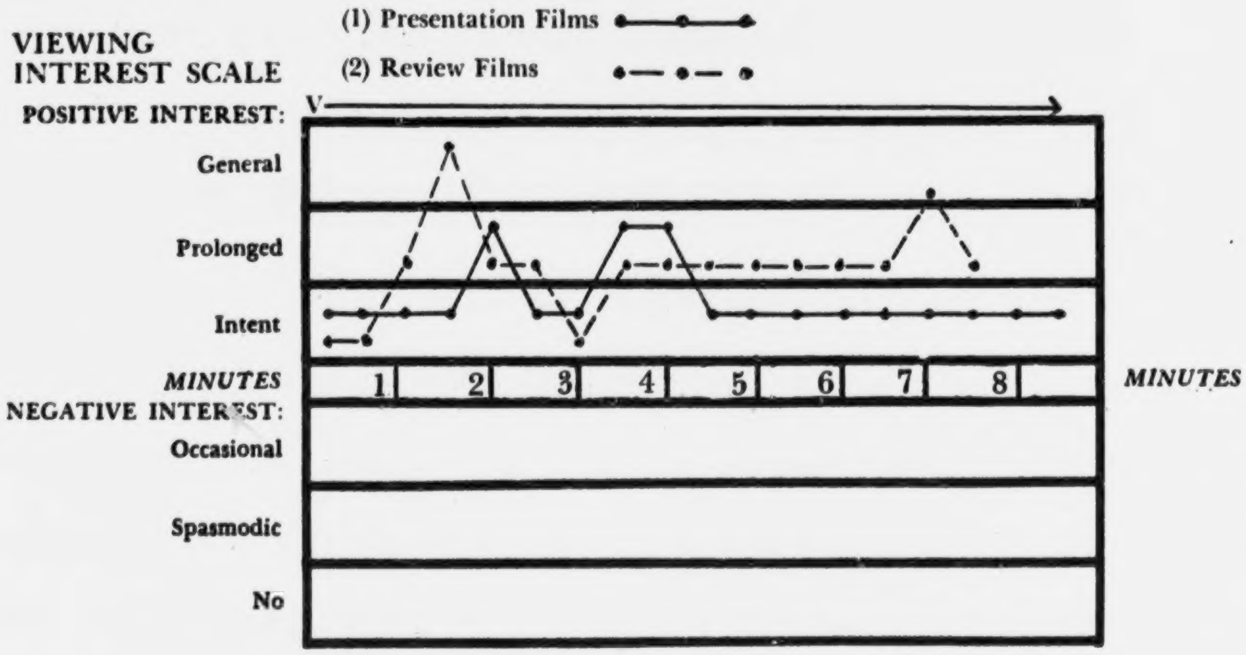
Case Study VIII
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 11 NO. EVALUATIONS 7



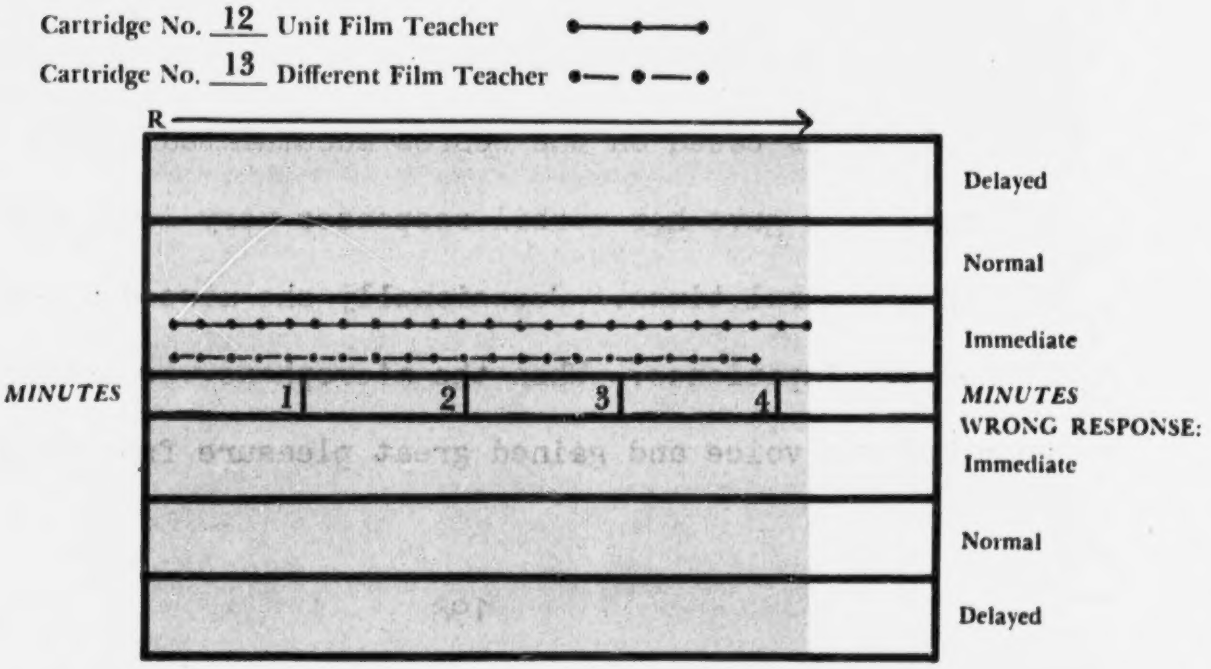
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher

Cartridge No. 13 Different Film Teacher



this girl who lipreads easily and can read at second grade level. Nevertheless, she expressed great enjoyment in viewing. She was usually brimming with enthusiasm often to the point of being hyperactive.

Her response rating on the end of unit film test was 94%. Responses were usually given immediately; in fact, she appeared impatient to have her chance to answer and indicated film was moving too slowly for her. Sometimes she would repeatedly point at the object with emphasis and often would snort in disgust that the teacher was so slow in comprehending her correct answers.

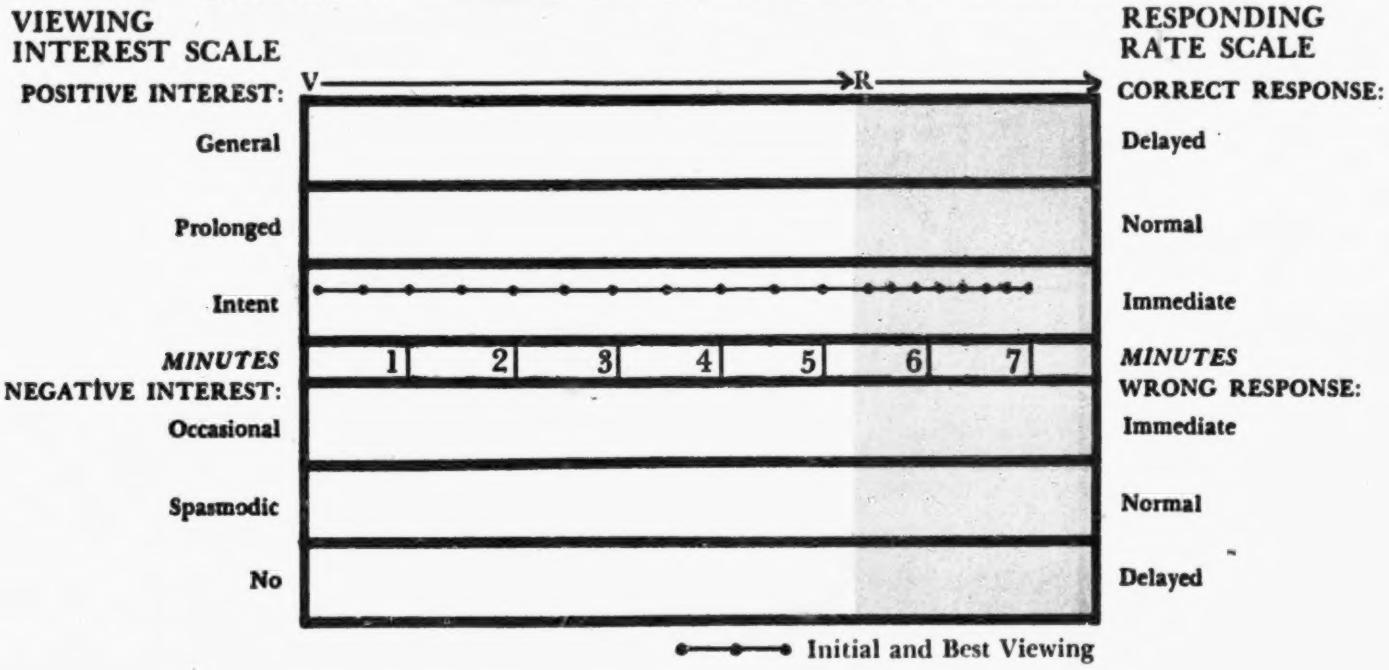
On the film test, using no cues, she made 100% correct responses ---- all without hesitation. Tested four months later, again on cartridge #12, her score was 91%, due to 2 errors. Cartridge #13, with the words presented by a different film teacher, was used two months later and she again rated 100% correct.

On the associated word approach, left and right concept, this little girl was 93% correct, having one of the highest ratings. This figure is based on the scores accumulated on all the teaching lessons. She gave her verbal responses very loud, often repeating them several times. Occasionally she missed a response because of her own impatience. When the microphone was used she could hear her own voice and gained great pleasure from this.

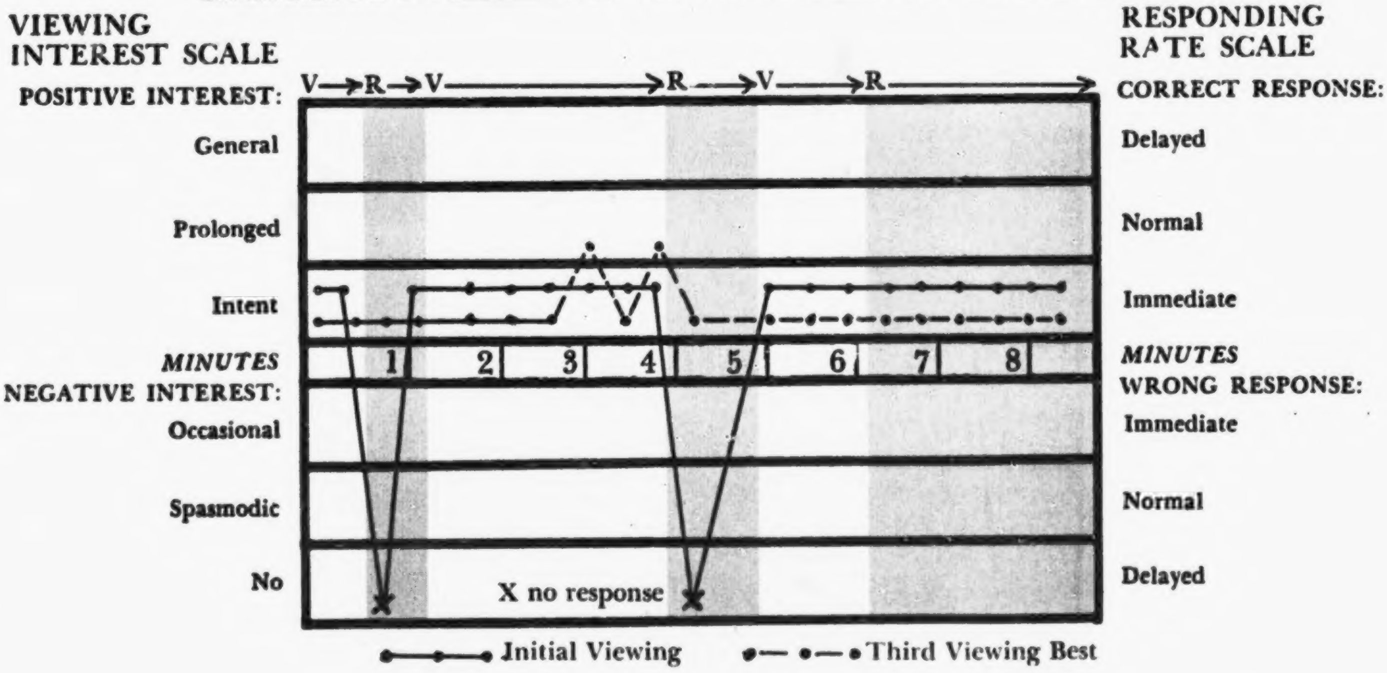
Case Study VIII
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

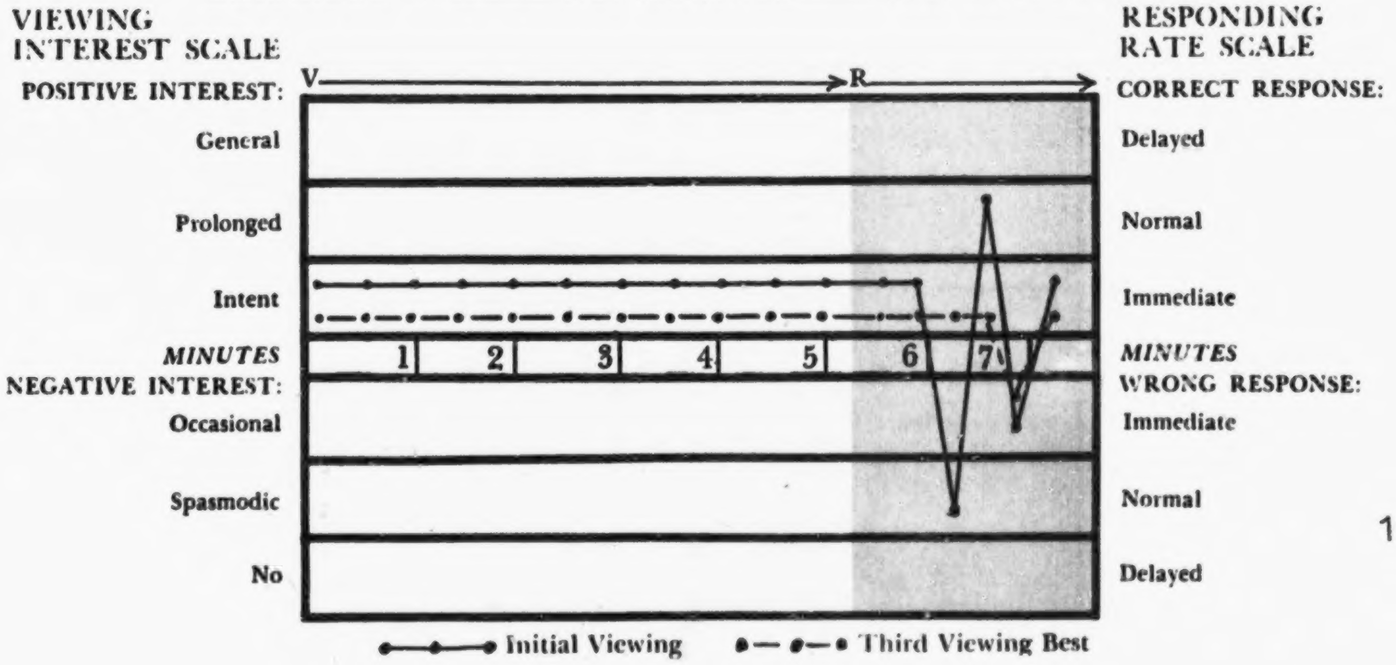
CARTRIDGE NO. 14 NO. VIEWINGS 3 NO. EVALUATIONS 3



CARTRIDGE NO. 15 NO. VIEWINGS 4 NO. EVALUATIONS 2

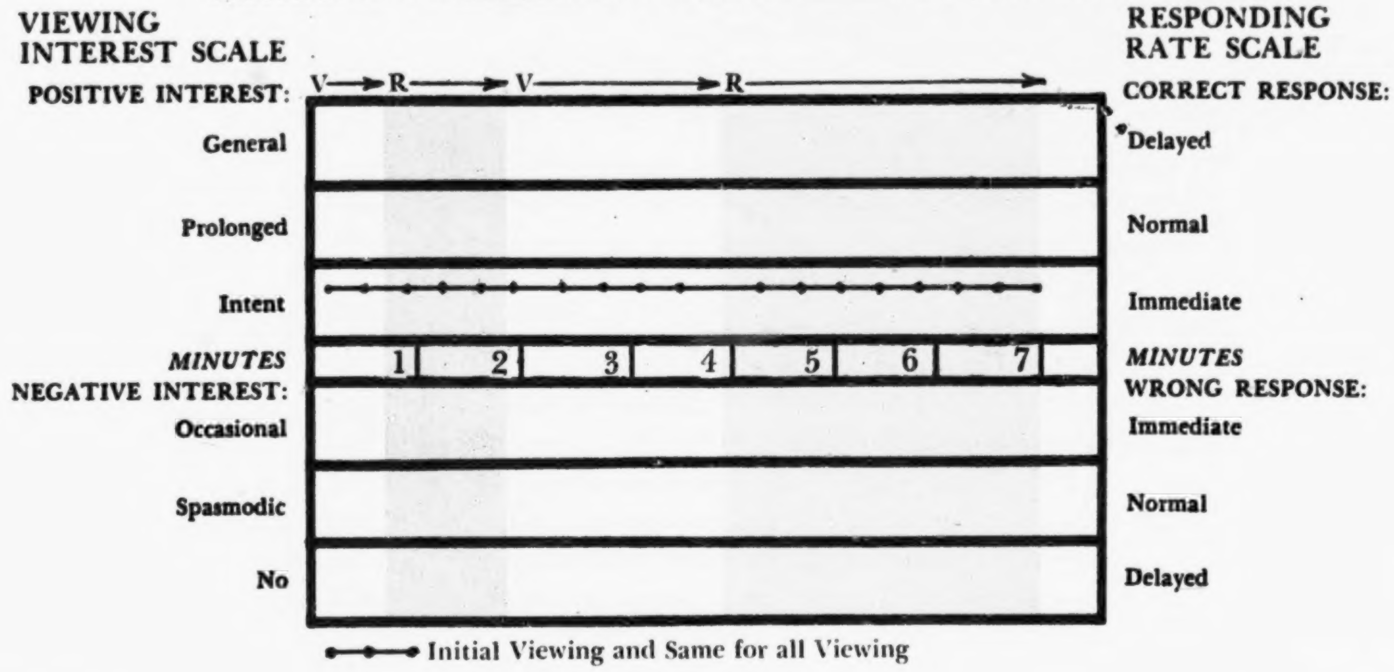


CARTRIDGE NO. 16 NO. VIEWINGS 4 NO. EVALUATIONS 3



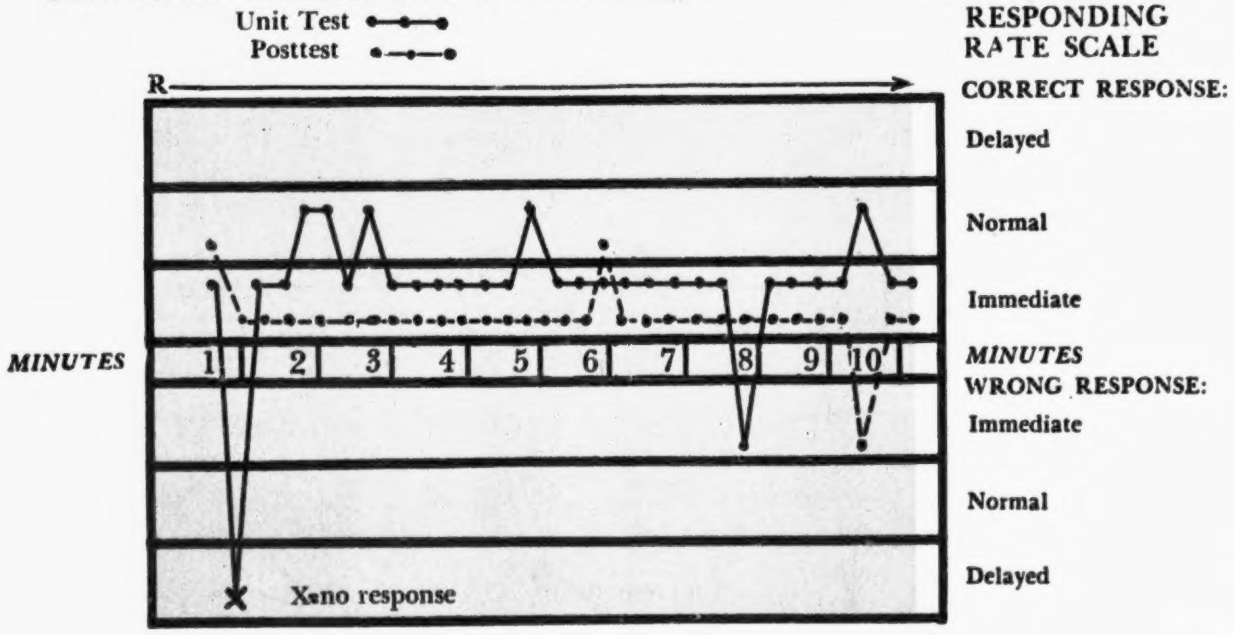
Case Study VIII
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 3 NO. EVALUATIONS 3



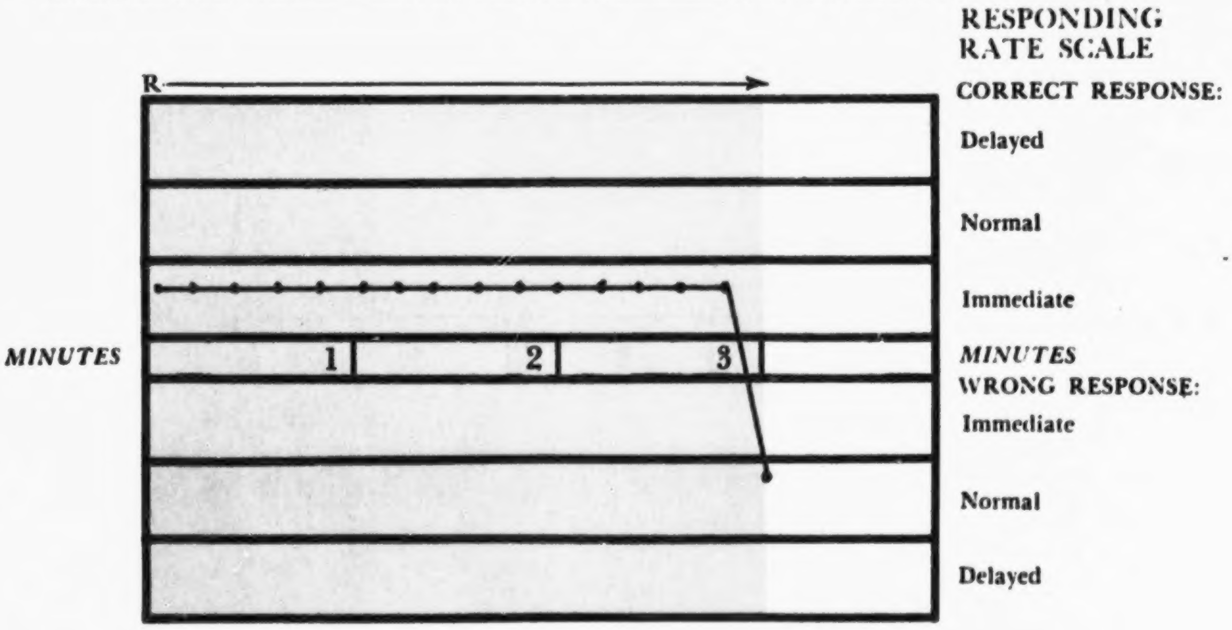
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



Case Study VIII (continued)

On the film test over the left-right series, #18, she scored 94%, a very good rating. Four months later she scored 97%, and when film #19, testing understanding of the left-right concept and use of projector was shown, she again achieved a rating of 97%.

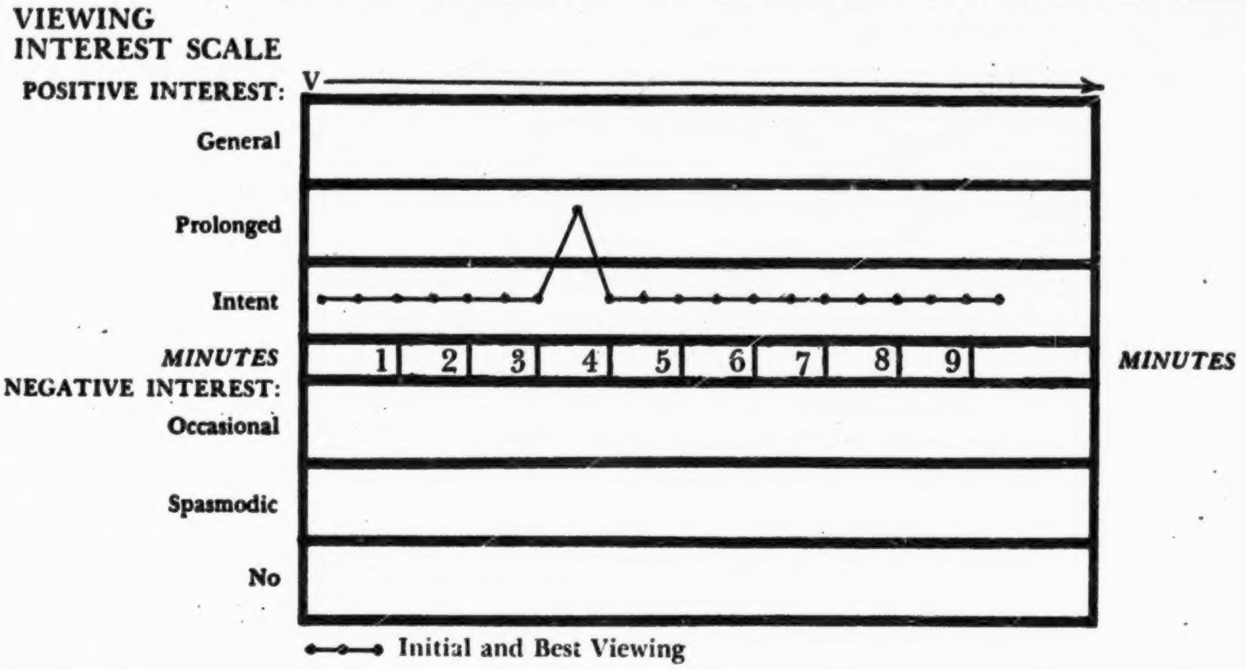
Her attention record for the multiple word food films showed her behavior pattern remaining at the intent and prolonged interest level. The pretest film over the foods vocabulary rated her as having 86% knowledge of the words. On the end of unit film test she was able to score 100%, a rating equalled by only one other subject. She had apparently increased her vocabulary during the study sessions. Film test #25, using a different teacher, gave her a 90% rating, as 2 errors were made.

This child could move much faster. More advanced material would be a challenge for her. Any films geared in speed to the average child would probably always seem slow to her. Because of her cooperative nature, eagerness to learn, and great curiosity, the films have held her attention in spite of the elementary nature of the material. She has watched closely and taken full advantage of the opportunities offered. This is characteristic of her behavior in the classroom, also.

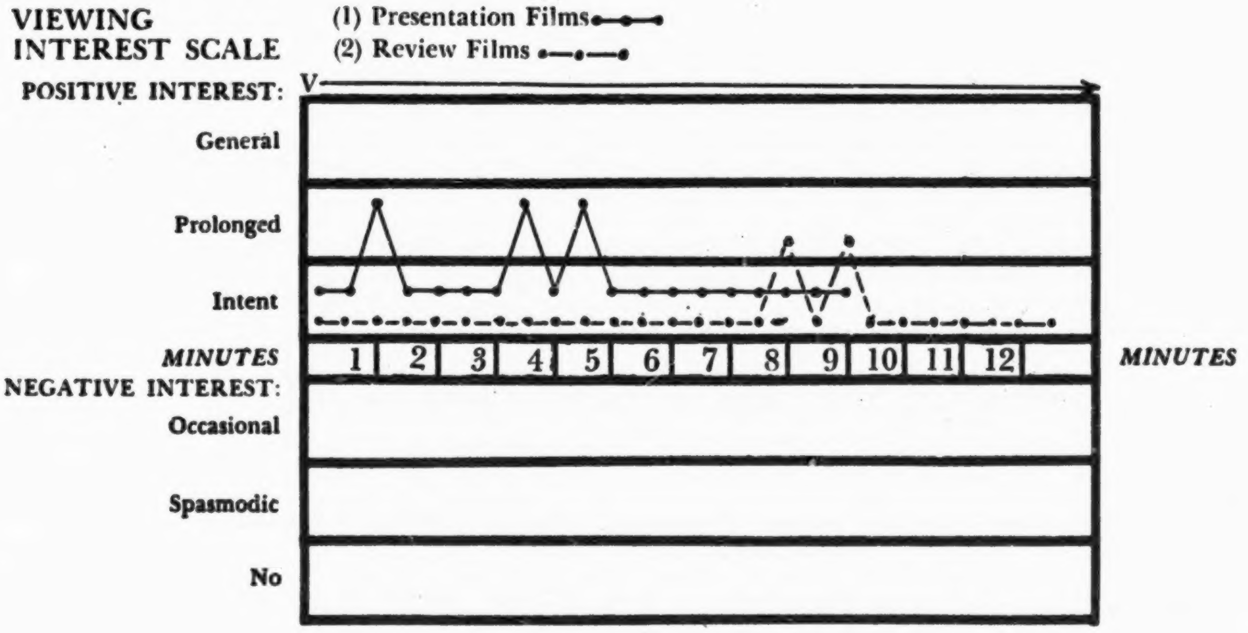
Case Study VIII
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 5 NO. EVALUATIONS 5

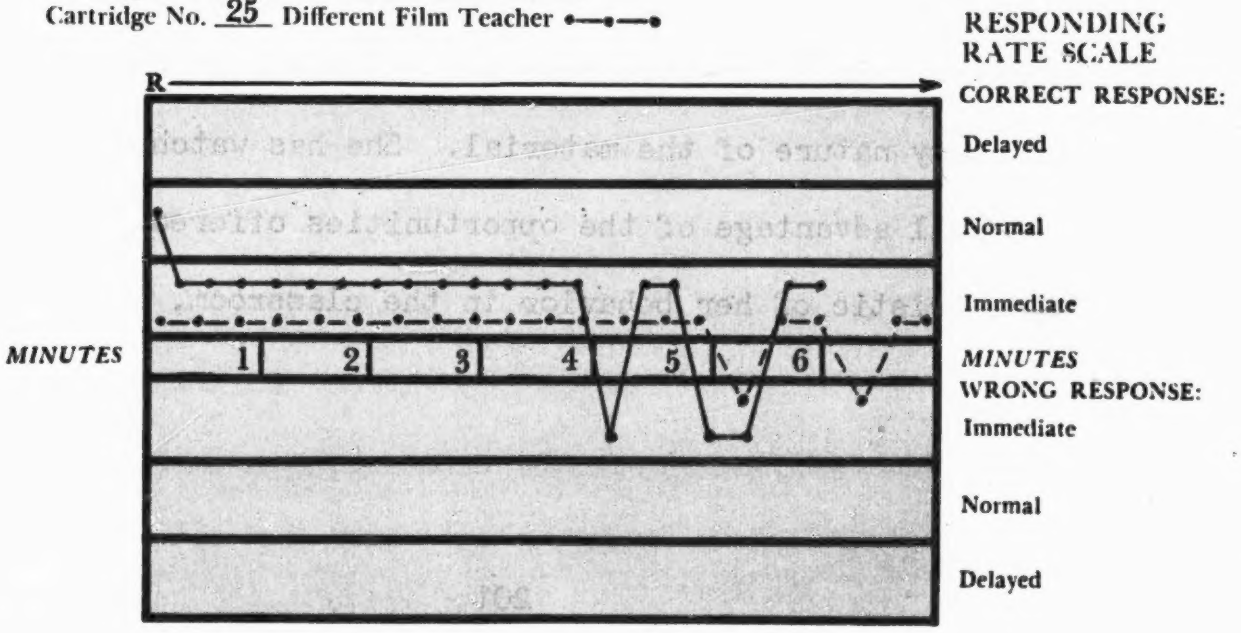


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher
Cartridge No. 25 Different Film Teacher



CASE STUDY IX

Chronological Age: 7-8
School Achievement Level: Beginning First
Reading Level: Readiness

Audiogram May 1964

Air conduction thresholds obtained only at 100 decibels for 500 and 2000 c.p.s. Lipreading ability is weak.

* * * * * *

This case is a boy of seven years, eight months with a profound hearing loss. He was a premature baby and had a collapsed lung. He has chronic bronchitis and frequent earaches. For the first three years of life he had little attention from his mother due to her heart condition which confined her to her bed.

This child is well-adjusted socially and has many friends. He likes to have lots of children in the house. The mother is very permissive and plans the home life around the family, making room for toys in the living room and allowing other youngsters to play there. The boy is a pal to his father and is helpful in doing simple household tasks.

Manipulative toys appeal to him but he has many other interests also. He is an avid television viewer, averaging about five hours a day.

This youngster suffered delayed development due to prematurity and had delayed speech. His speech is still very poor. He

Case Study IX (continued)

gestures a great deal. Testing at the Nebraska Psychiatric Institute indicated normal intelligence at five years of age. His language is limited and his school achievement level is beginning first grade, though he is only reading at the "readiness" level. He has had one year and two months work at school in the hard of hearing unit.

In viewing the project films he is usually quite attentive during the first viewing but tires if he must sit too long. He is a very poor lipreader and has not learned to concentrate on teacher's lips.

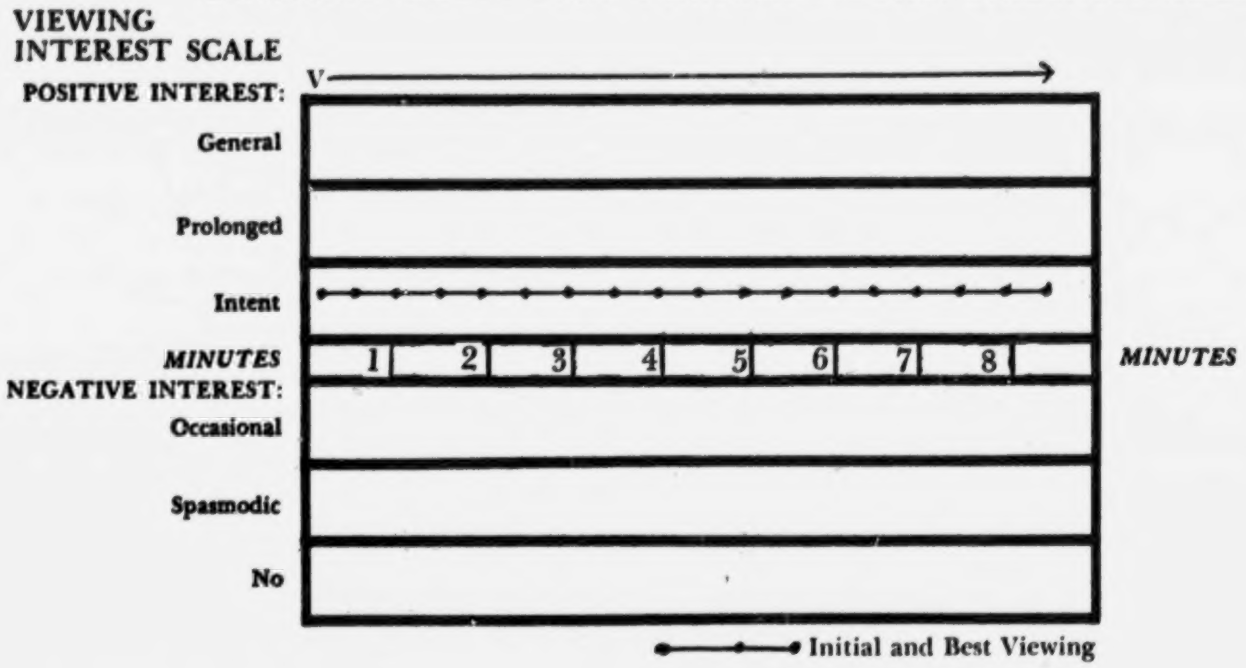
Intent and prolonged interest levels were maintained while watching the single word emphasis films. Some distraction occurred during review films, possibly reflecting boredom with repetition. When he was allowed to view a film 3 times successively, he would become very restless. He appeared to enjoy watching but to consider this an entertainment rather than a learning experience. He even had his pockets stocked with candy occasionally! He is well-oriented to this attitude from his daily television habits, but seemed to gain an understanding of the purpose of the films while attempting the response lessons.

An amusing incident occurred one day when the boy was viewing after a disagreement with his teacher. She had just taken away

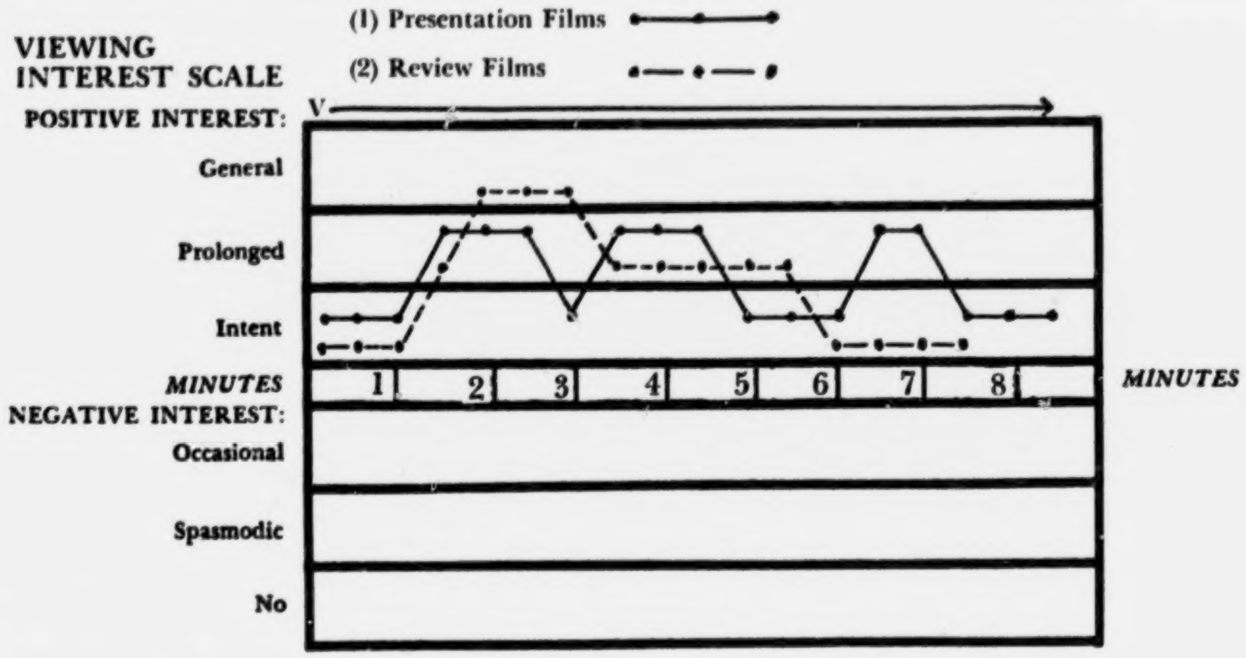
Case Study IX
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO 2 **NO. VIEWINGS** 11 **NO. EVALUATIONS** 9



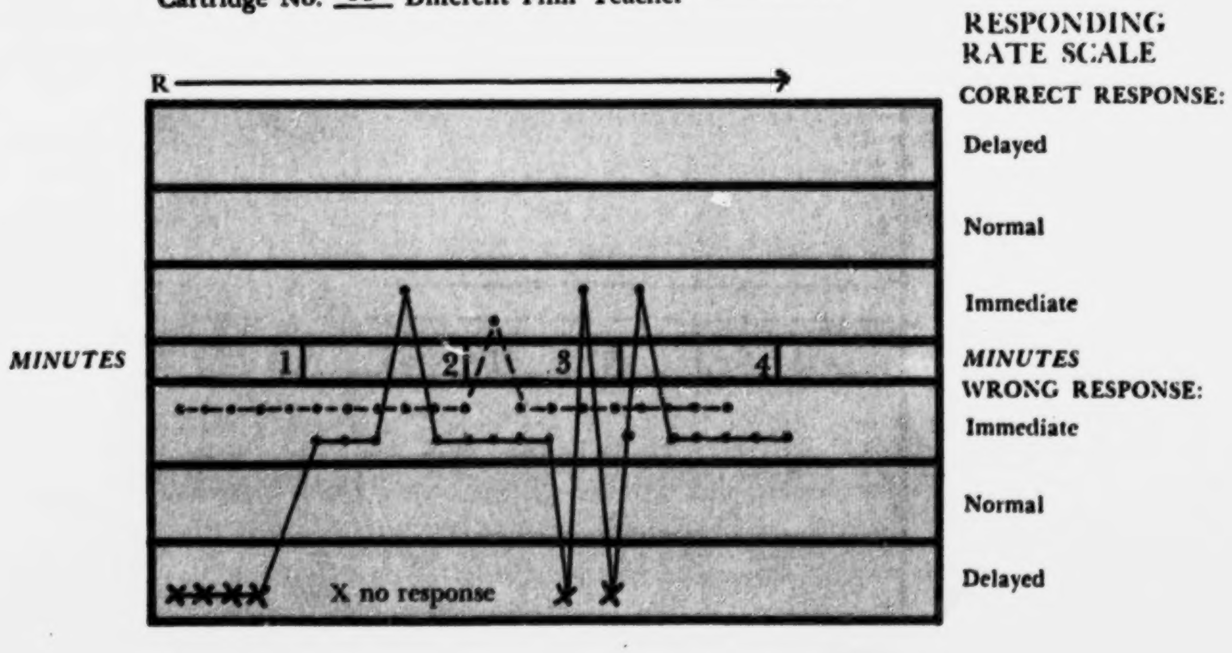
Composite Profile



Test Films

Cartridge No. 12 **Unit Film Teacher** •—•—•

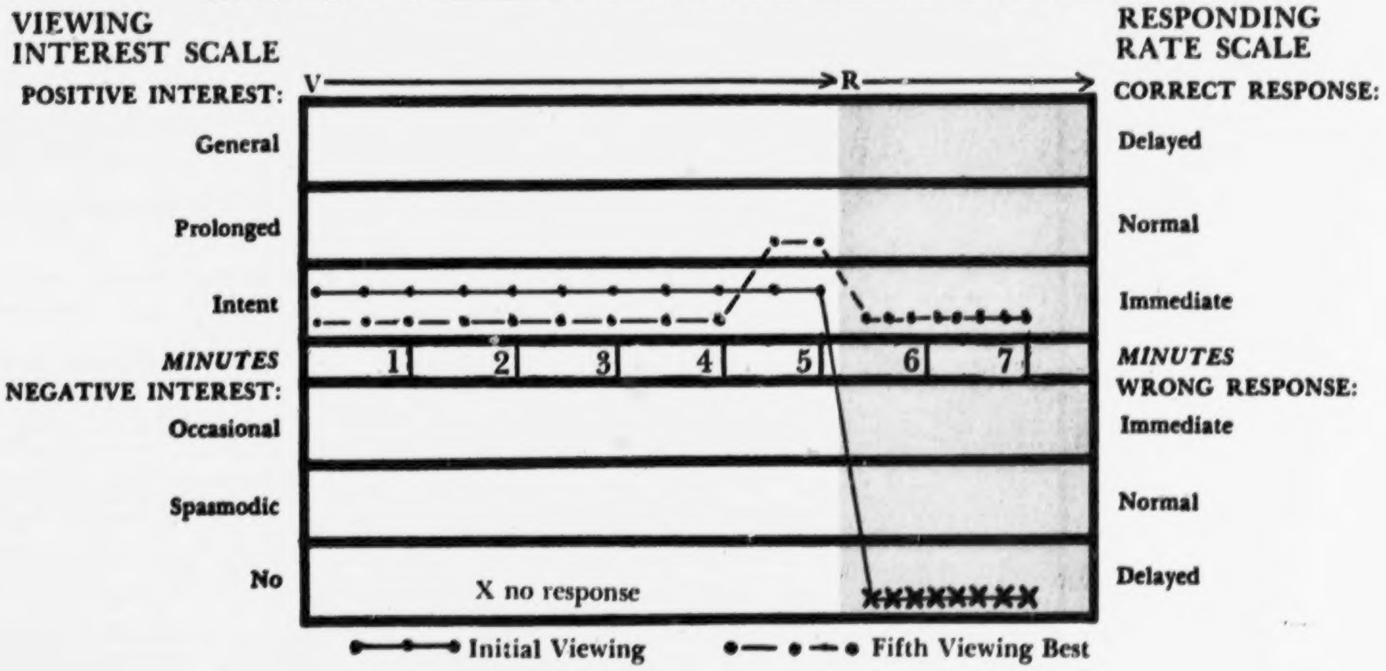
Cartridge No. 13 **Different Film Teacher** •—•—•



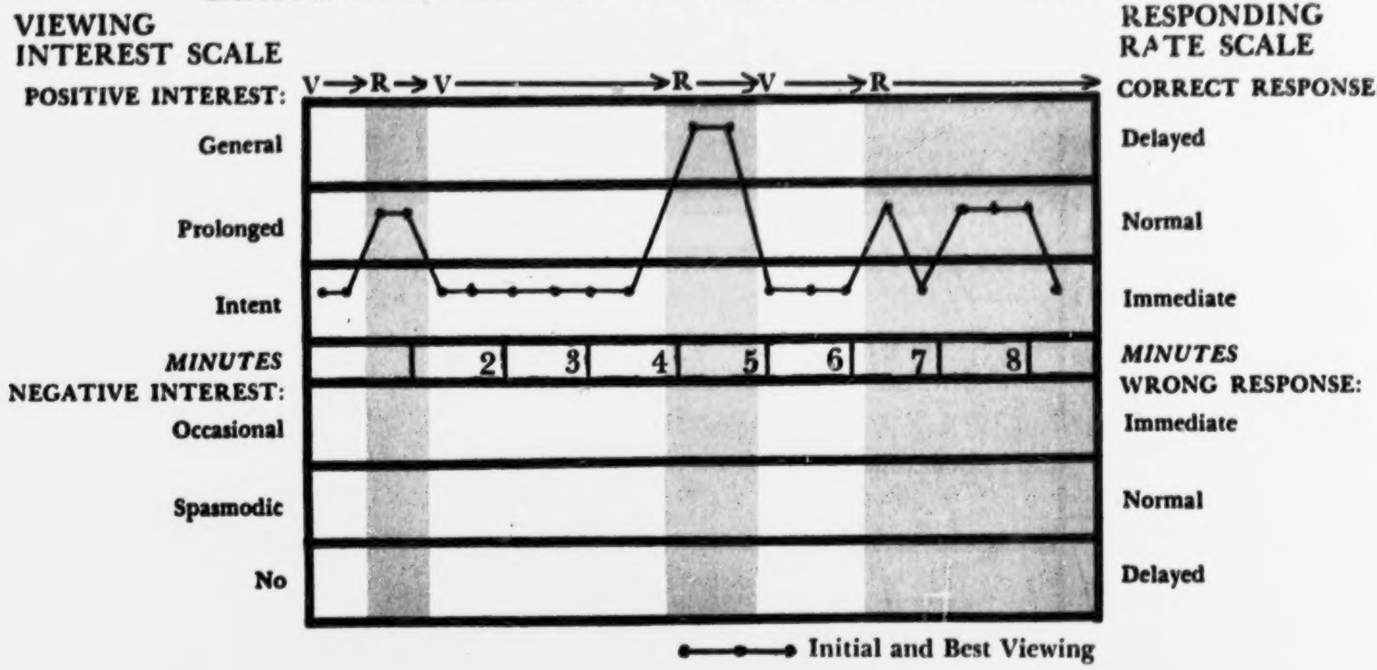
Case Study IX
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

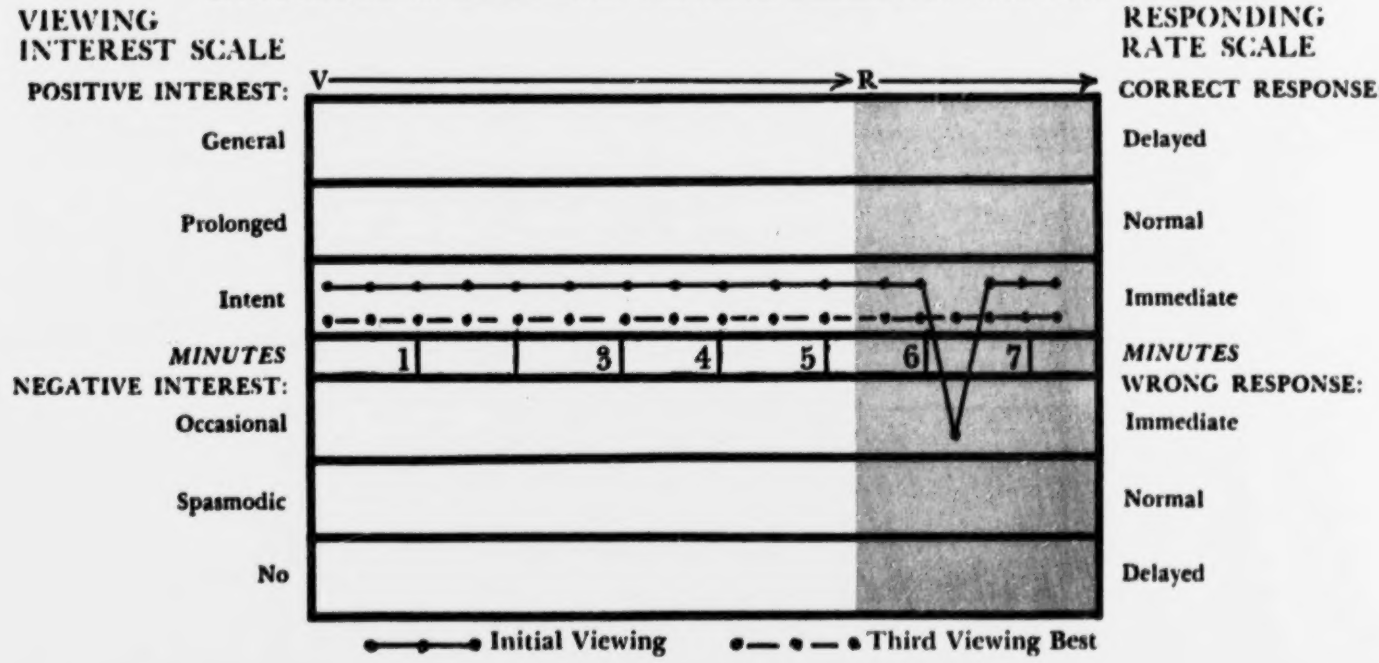
CARTRIDGE NO. 14 NO. VIEWINGS 8 NO. EVALUATIONS 4



CARTRIDGE NO. 15 NO. VIEWINGS 7 NO. EVALUATIONS 4



CARTRIDGE NO. 16 NO. VIEWINGS 7 NO. EVALUATIONS 4



Case Study IX (continued)

his watch as a disciplinary measure, and he would not look at her or at her face on the film screen for some time. He finally did look at her but never established the usual "rapport."

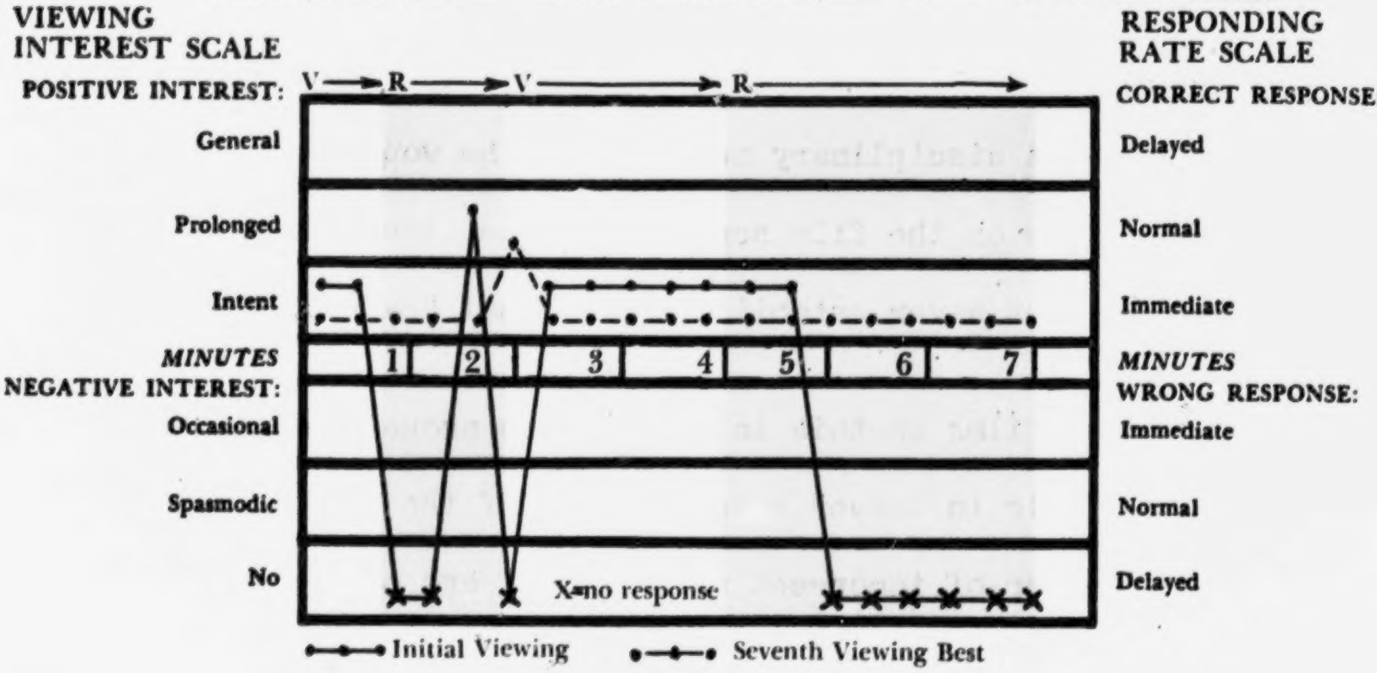
The response films on this initial series aroused his interest and he was able to answer correctly 90% of the time. He had the greatest number of incorrect responses of any of the subjects, however. His very severe loss, frequent inattention, and inability to lipread probably account for this fact. Nevertheless, he achieved 175 correct responses and appeared to make some gains in lipreading during the study. His concentration of lip movements improved as the project continued. He relied on cues whenever possible and was lacking in confidence.

The film test using no cues (#12) was beyond him. He made only 3 correct responses out of 23, a 13% rating. He got confused at the start of the film and never could recover from this. He seemed to give up. Four months later he was tested again and scored 20%, far lower than any of the other subjects. He could not understand the directions for placement of objects and finally just placed them at random. He was so upset by this that the portion of the test requiring him to designate objects is not a true test of his ability to lipread the single words taught.

Test #13 was administered two months later and he rated 25% correct, again lowest of the group. He would not even have done this

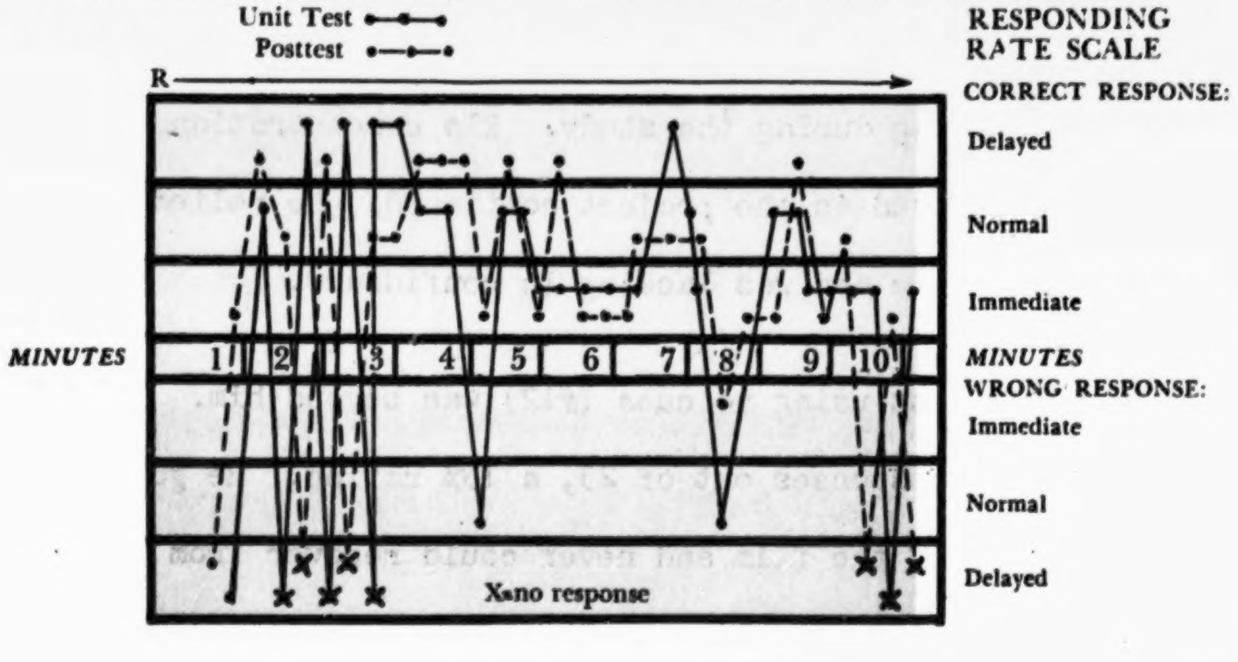
Case Study IX
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 8 NO. EVALUATIONS 3



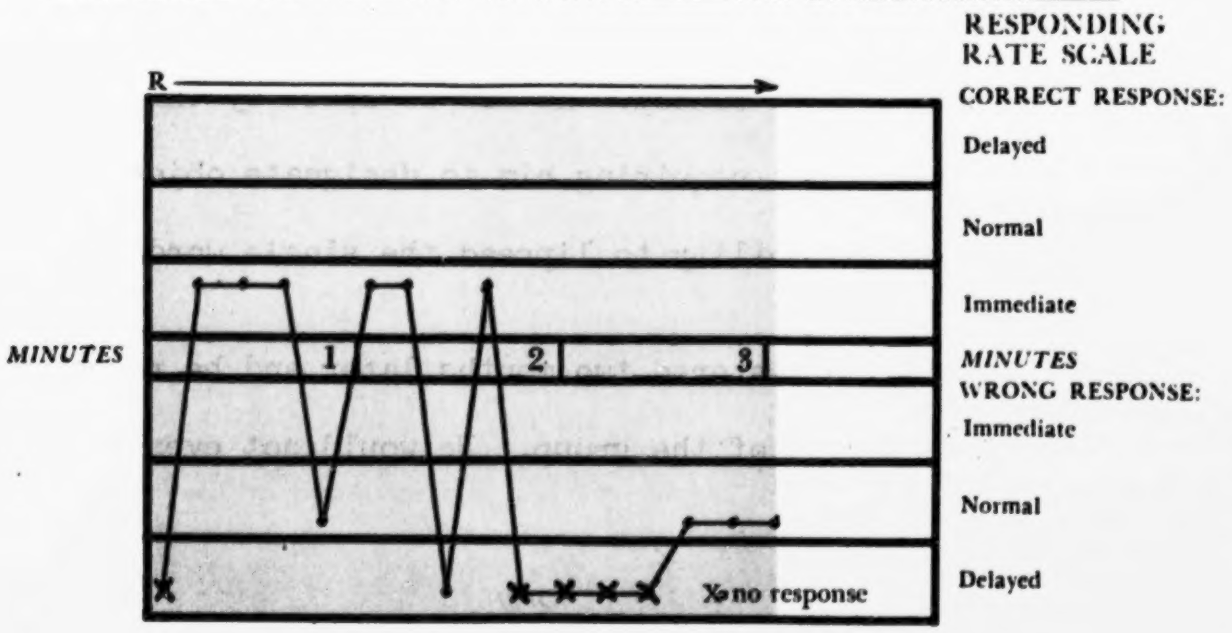
Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO. 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



well had not the classroom teacher directed him on placing objects in the last four responses. He could follow her directions but would not even attempt to follow film teacher. He cried in misery and frustration, giving all who were observing a sad object lesson in how frustrating it must be not to be able to understand the world of people!

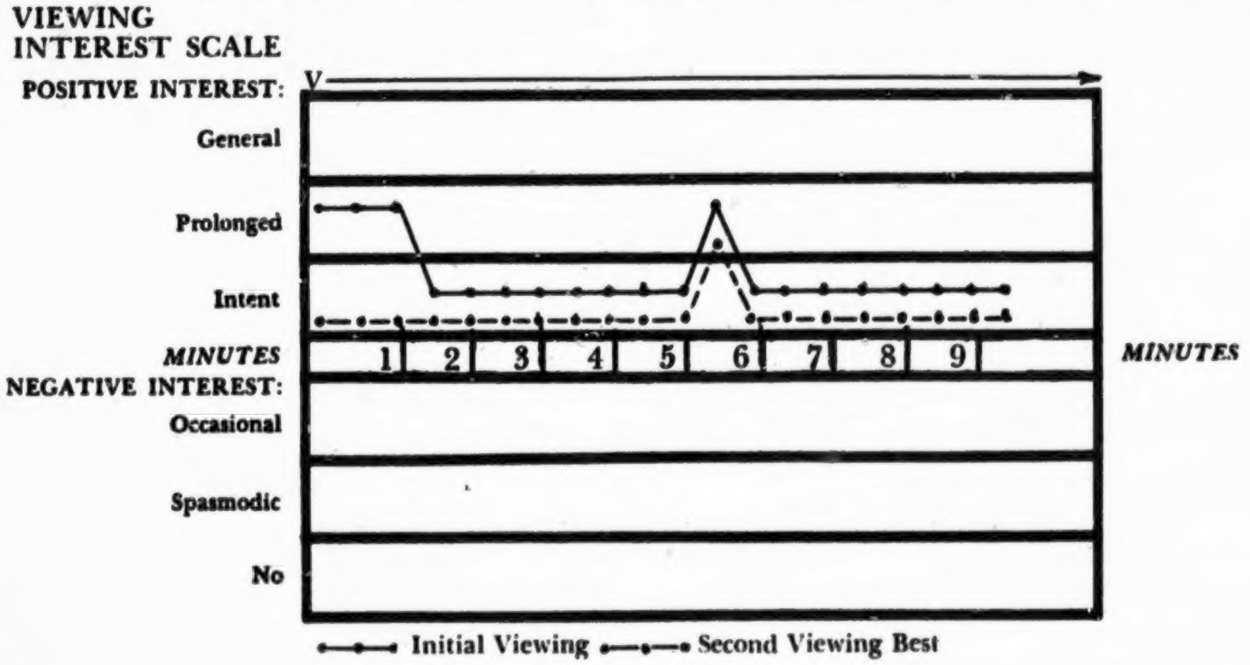
In the associated word lessons, left and right concept, this subject did very poorly. The lipreading required at this level was too difficult for him. He had a 66% rating, due to the fact that he did not respond at all 38 times. He did improve after more exposures to the material, finally learned the left and right concept, and could lipread "left" and "right." One encouraging note - through use of verbal responses his clarity of speech improved for the words "left" and "right." Part of his recorded errors may have been due to the inability of the observer to understand his poorly-formed words during the early testing.

Most of his failures to respond occurred during initial viewings. He possibly did not comprehend all the auxiliary directions, but after learning what was expected he was able to lipread the key words. He was unable to hear his voice over the microphone, and he never adjusted volume of the earphones.

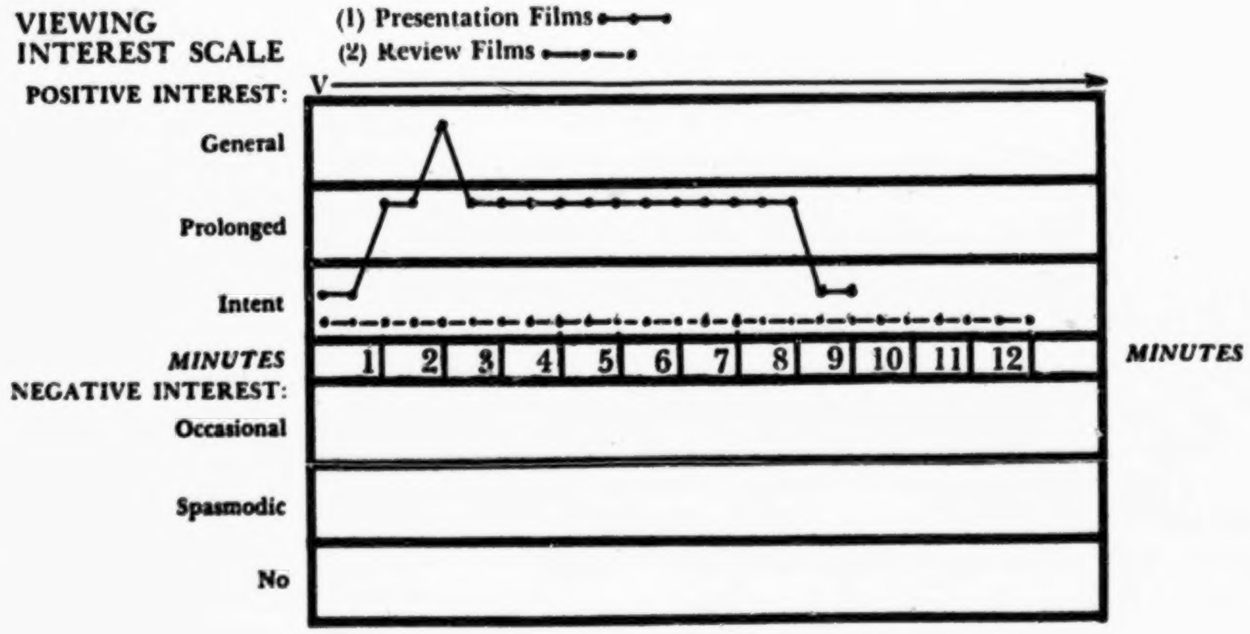
Case Study IX
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 10 NO. EVALUATIONS 10



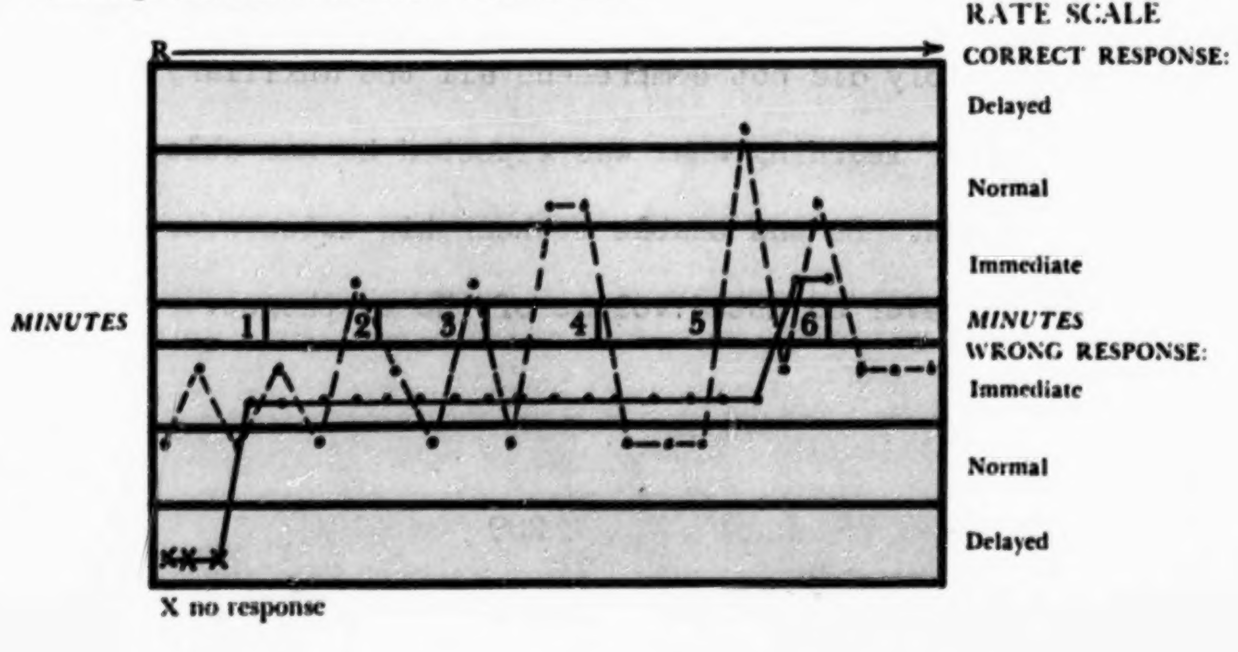
Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher

Cartridge No. 25 Different Film Teacher



Case Study IX (continued)

His score on the final test (#18) of the left-right series was 77%, an 11% increase over his former rating. He did not concentrate on lip movements during test and clowned in mirror. Four months later he did score 85% on the same test but many of these were delayed responses and he was following lead of film actor. He gained confidence and increased speed toward end of film. The classroom teacher believed that this film was too fast for him. On test film #19, concerning left-right and use of projector, the subject got 6 out of 9 responses right when required to raise the left or right hand. He had to have help from classroom teacher on directions for turning projector on and off as he began to cry and became so frustrated he wanted to quit. He had been trained to turn off projector and leave booth and could not shift his "mind-set" to this new idea. His score was 66%, but this is really meaningless as he required so much assistance.

On the multiple word food series, this subject's interest level remained for the most part at the prolonged to intent interest level with one drop to general interest on film #21. This is a higher interest rating than he had over the associated word series, but not quite as good as the single word series.

His pretest over the foods vocabulary showed him as having knowledge of only 10% of the words. He was completely confused when instructed to circle the pictures and probably got two words right only by accident. After viewing the teaching films he scored 24%, missing 16 out of 21 responses. He seemed to be trying hard on this test but did not discriminate between illustrations, feeling his duty was done whenever a circle was drawn anywhere.

On test #25 over the foods vocabulary he was very uncertain and slow in making responses. He achieved a 29% rating, however. The results indicate that this boy had learned some of the vocabulary presented but the form of the test was too difficult for him to master and probably some words used in the directions were unknown to him. It was too fast for his operating pace, also. Therefore, the observer feels that the boy was not adequately tested over the actual knowledge gained from his viewing of the multiple word training films.

While this child's ratings are disappointingly low, an analysis of the evaluation records leads this observer to believe that the boy has made some gains in vocabulary and in knowledge of the left-right concept. He has improved in ability to concentrate. Development of maturity in the school situation should help him considerably. Though he is older than many of the subjects, he has not been in school as long and had less previous training; also his hearing loss is more acute. He is easily upset and becomes quite emotional when frustrated, then gives up and refuses to try. He thinks slowly, likes to follow a regular routine and cannot adjust readily to new ideas. He is very unsure of himself and waits for direction from the classroom teacher. If he begins to develop a store of words he can lip-read, development of more self-reliance should follow and progress improve.

This boy presents a great challenge. If new vocabulary and concepts can be presented with a minimum of auxiliary directions, he may be able to grasp them. Any development in ability is very gratifying as his need is so great.

Chronological Age: 8-4

CASE STUDY X

School Achievement Level: Second

Reading Level: Second

Audiogram May 1964

	125	250	500	1000	1500
Right ear	65	75	95	100	100
Left ear	65	65	N.R.	N.R.	N.R.

No change in response noted with or without aid. Responses to sound with the desk amplifier questionable.

* * * * * *

This perfectly healthy child suffered a profound hearing loss from meningitis at five years of age. He is now eight years, four months, and is in good health except for occasional asthmatic attacks. His most recent hearing test showed no change in response with or without aid. His responses to sound with the desk amplifier were questionable.

This boy mingles freely with neighborhood children, and his imagination and creative ability, especially in carpentry, draw other boys to him. He is quite interested in mechanical devices, especially farm equipment, of which he knows all the names. He enjoys playing alone at times and likes to use tools and draw plans for things. He is a thoughtful, precise boy, sometimes given to daydreaming, but very self-reliant. The boy spends one and one-half to two hours a day viewing television. The parents include him in all family activities. They are involved in many creative projects, are well-educated, and the environment is culturally stimulating.

The non-verbal section of the WISC was given to this child and he was compared with norms for children with hearing. Most of the ratings of these performance items fell within the top 5% of the general population. This would rank him in the "lower superior" classification.

This child needs to improve enunciation and speak louder. He uses many gestures. He is approximately the second grade level in school achievement and reading. He has attended school two and one-half years. He lipreads well.

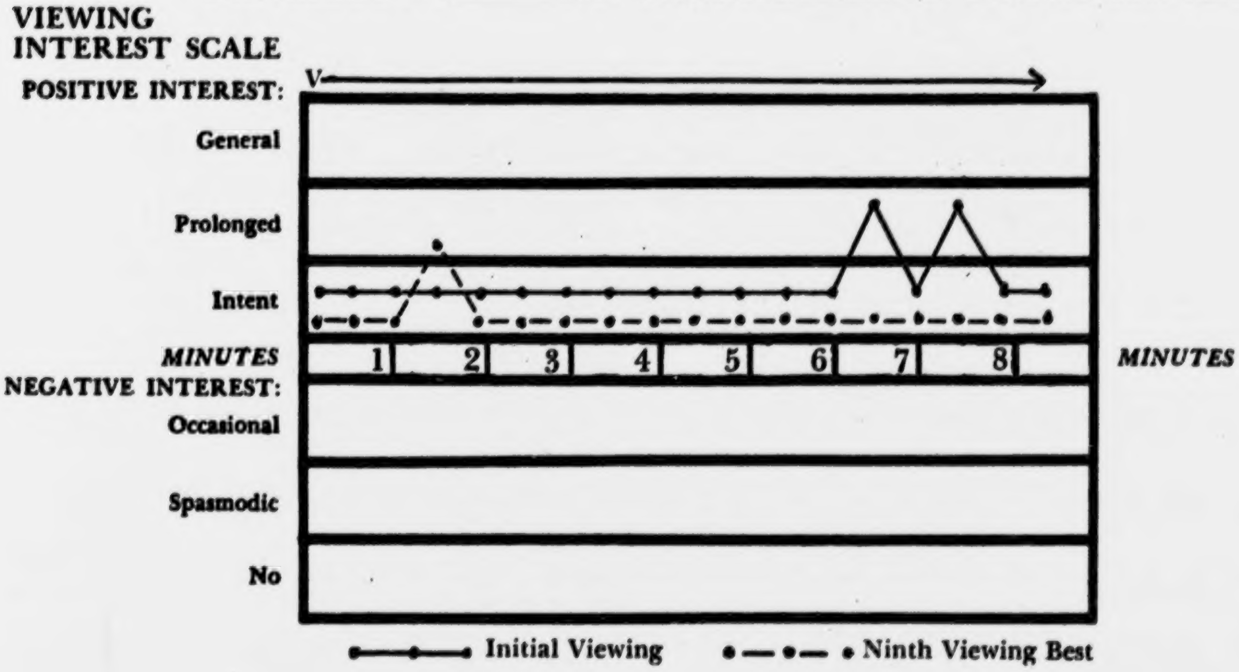
In working with the project films, this boy was especially interested in the mechanical aspects of the machine. He seemed to grasp the material readily. He was quite inattentive during the first few viewings but watched more closely after he became accustomed to the experience, and appeared to become more interested. He always anticipated the end and liked to push "off" button. He verbalized frequently and counted. He watched the teacher's lips closely.

His profile on the single word emphasis films shows interest varying from prolonged to high with an occasional drop to the

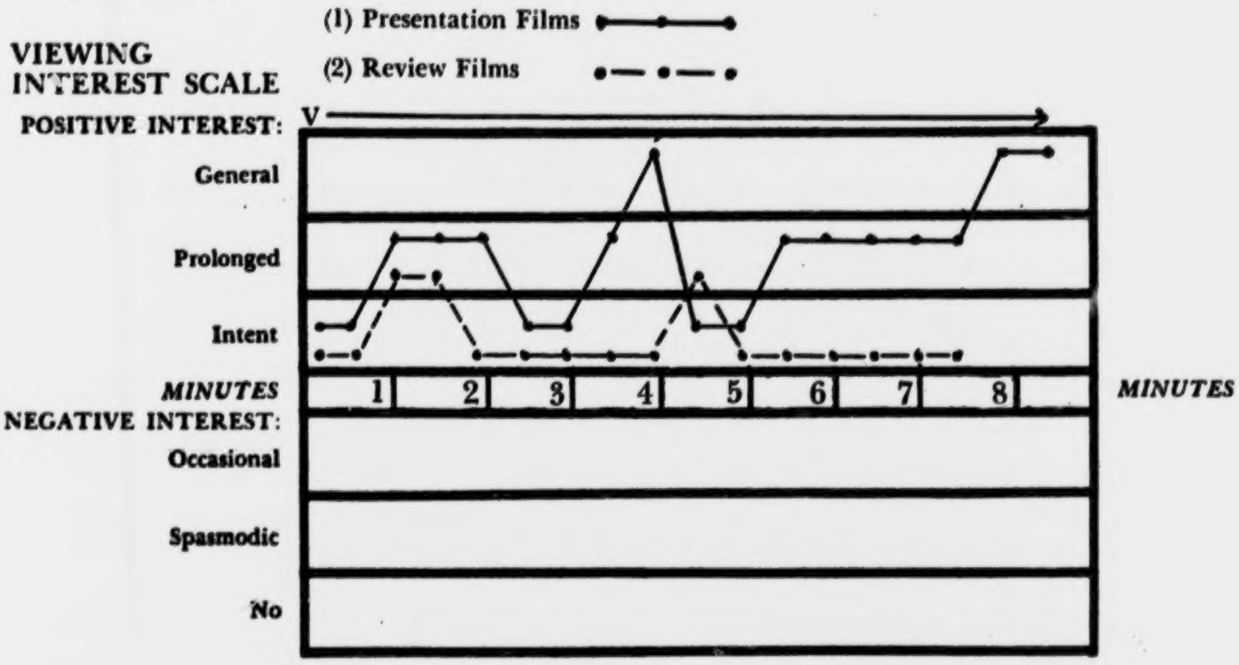
Case Study X
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 9 NO. EVALUATIONS 6



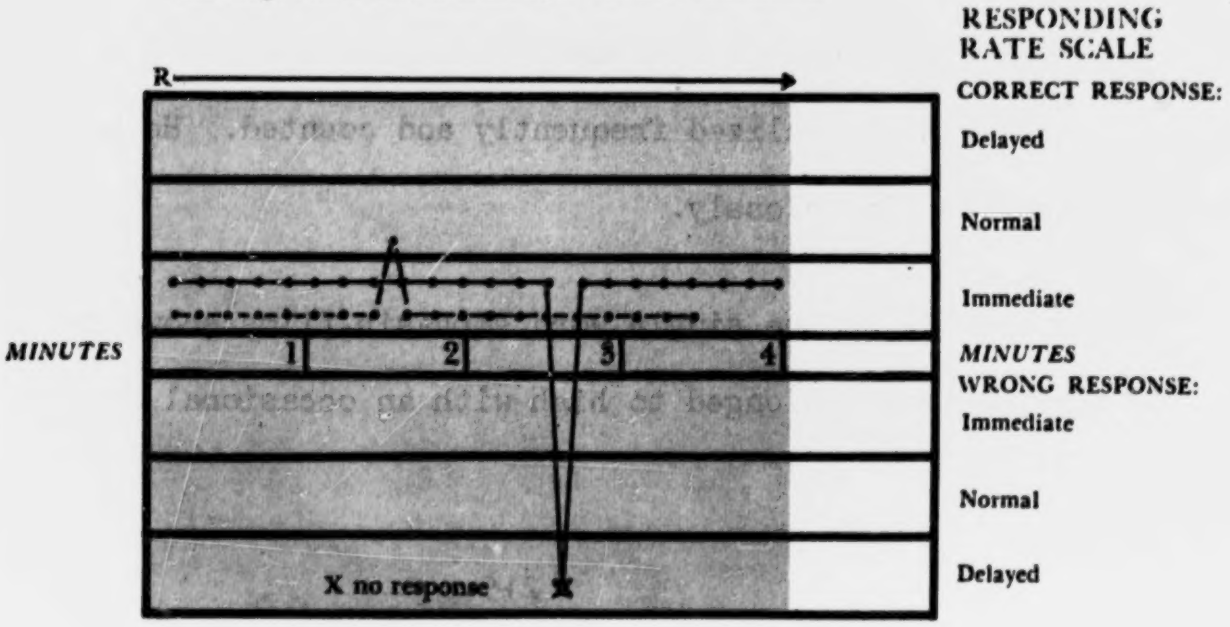
Composite Profile



Test Films

Cartridge No. 12 Unit Film Teacher

Cartridge No. 13 Different Film Teacher



general level. After the first three films his viewing level became much steadier, showing a straight line at high interest on cartridges #7, #9, and #11. This change was noted after the first response film, which may have been influential in helping him understand the purpose of the lessons. One showing at a sitting is preferable for him as he grasps material readily and becomes bored after he has mastered it.

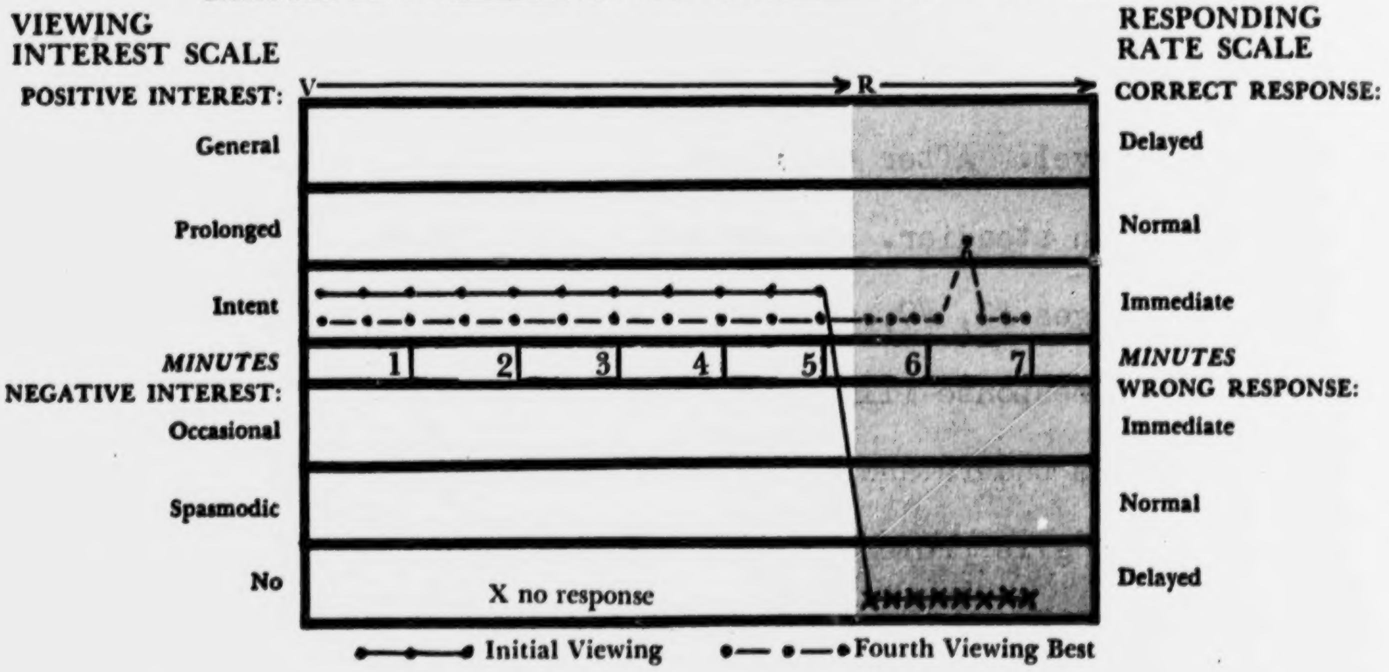
Though he expressed masculine superiority and disgust when seeing the "doll" film he watched intently. The "tractor" film delighted him and he recognized one tractor which he told his teacher was a "John Deere," like one he had at home.

The response films in the initial series showed a 96% correct rating. These first films present material which is somewhat elementary for this subject. He was eager to respond, however, and thoroughly enjoyed the chance to participate. His perfectionist qualities became evident as he placed objects with extreme care and tried hard to do things exactly as teacher directed. The record on the film test showed him missing only one response out of 23. Tested four months later, he scored 87%. He confused "car" and "doll," pointing to the doll each time the car was mentioned. This confusion may have been caused by the long lapse since the study occurred. However, one month later he rated 100% on film test #13, covering the same words presented by a different teacher.

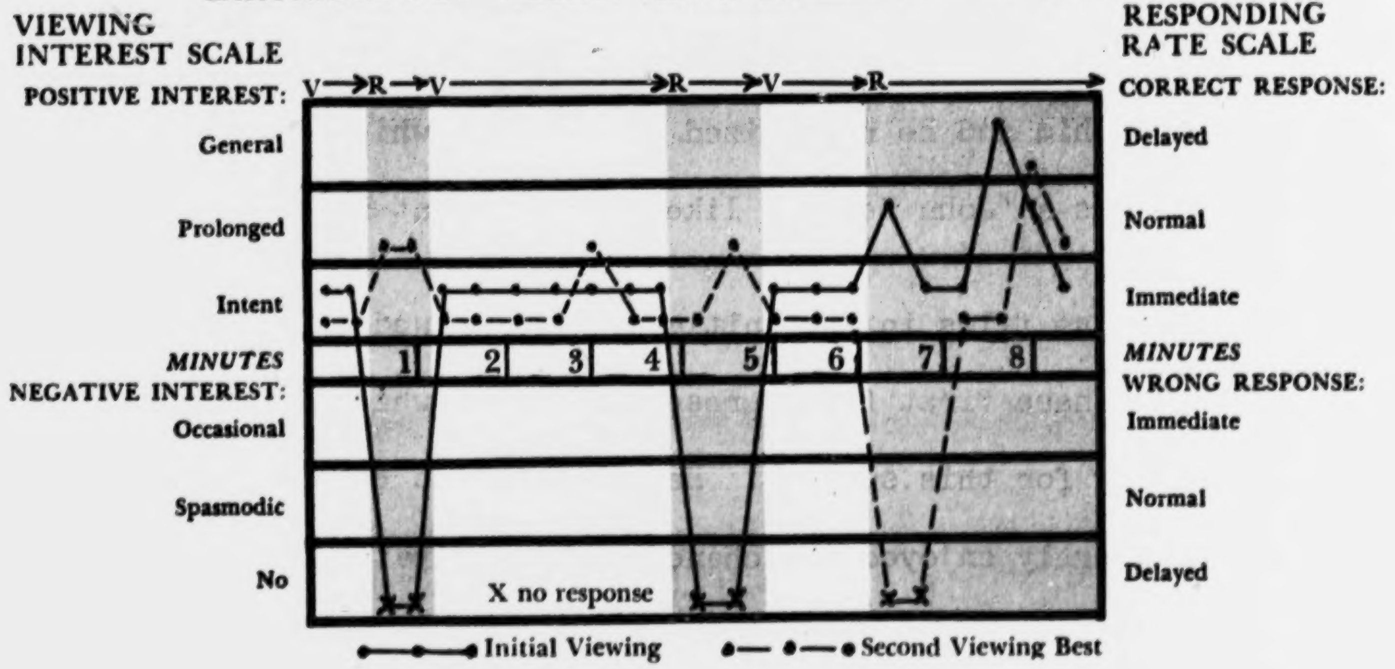
Case Study X
EVALUATION PROFILE
ASSOCIATED WORD APPROACH SERIES

Initial Film

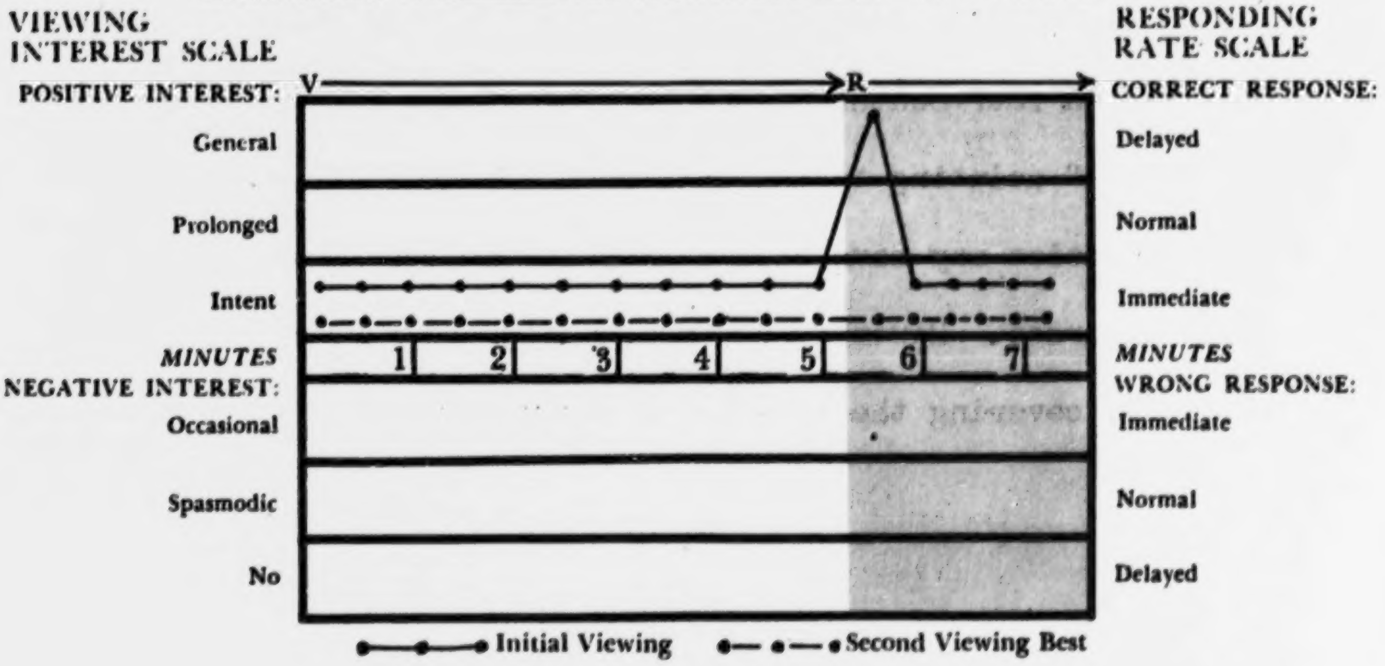
CARTRIDGE NO 14 NO. VIEWINGS 4 NO. EVALUATIONS 3



CARTRIDGE NO 15 NO. VIEWINGS 3 NO. EVALUATIONS 2



CARTRIDGE NO 16 NO. VIEWINGS 4 NO. EVALUATIONS 4



Case Study X (continued)

On the first associated word film, left and right concept, this boy was an enigma to the observer. His room teacher was sure that he knew the left-right concept, but he was unable to respond to pretesting by another teacher on left and right. He did not lipread the words at all. At first he made no response to the film questions. He made some correct responses on the second viewing, and by the third time was responding perfectly, and also could get answers right every time on posttesting by teacher. The observer believes he learned to lipread the words from the film lessons and to associate the correct word with the concept.

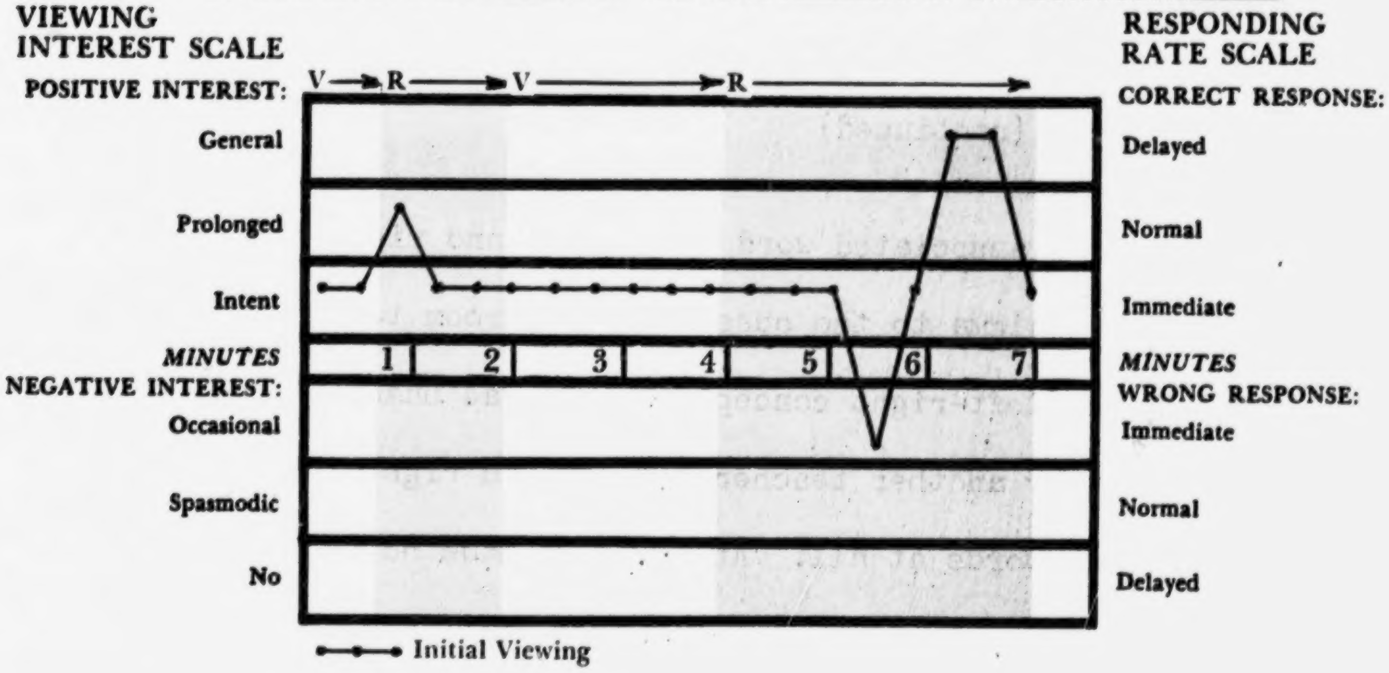
On verbal responses, he formed the words with his lips but seldom spoke aloud. He was very attentive to these more complex pictures. They more nearly approximate his achievement level, and are more of a challenge to a boy of his intellectual ability.

The words "Push the button" may not be understood by him as in cartridge #18 he pushed the button when the name of the child actor was spoken. He was correct 28 times, and failed to respond 3 times.

His percentage rating on the associated word films teaching lessons was 75% due to the fact that he failed to respond 18 times. He improved greatly during the viewing of the series, scoring 90% correct on film test #18. The observer believes

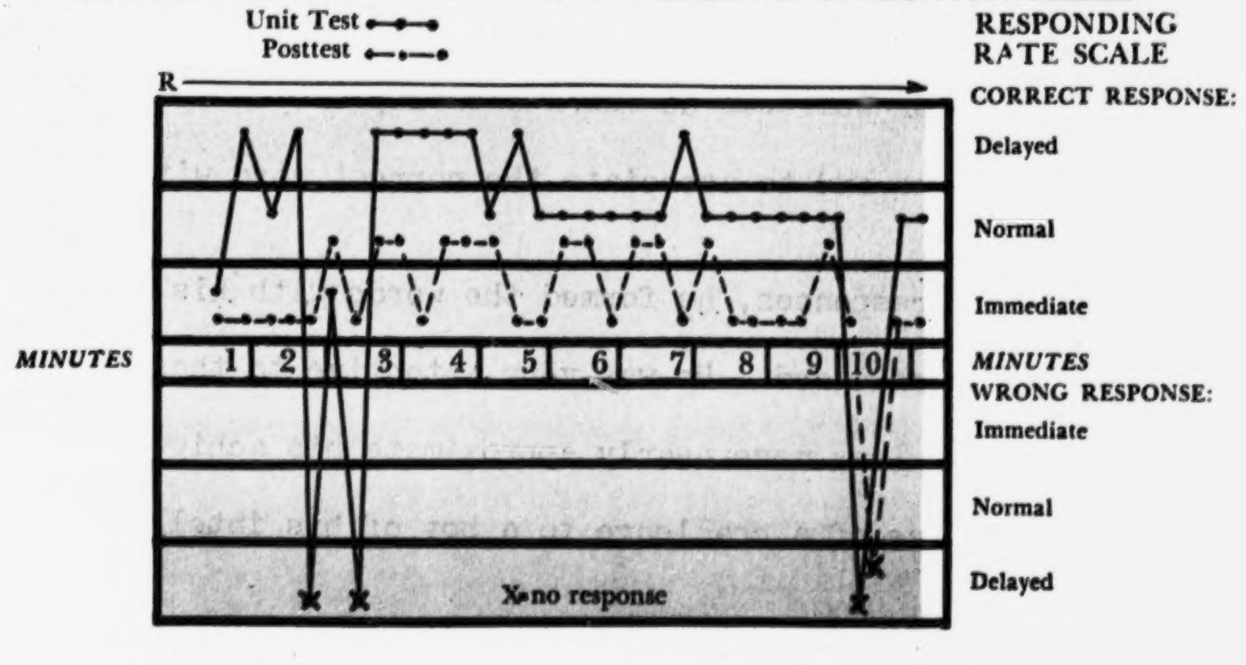
Case Study X
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO 17 NO. VIEWINGS 1 NO. EVALUATIONS 1



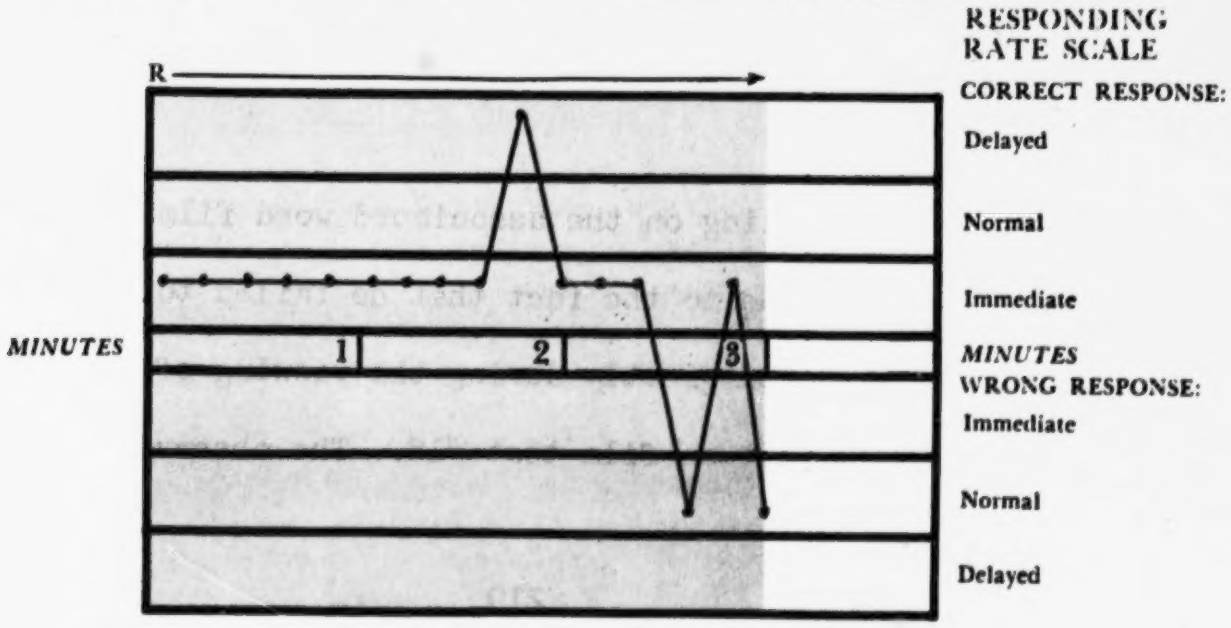
Test Films

CARTRIDGE NO 18 NO. VIEWINGS 2 NO. EVALUATIONS 2



Test Films

CARTRIDGE NO 19 NO. VIEWINGS 1 NO. EVALUATIONS 1



that this boy gained in lipreading ability when the associated word approach was presented and learned to lipread "left" and "right," as well as some auxiliary words. His understanding of the concept was clarified through use of the project films (and possibly understood for the first time).

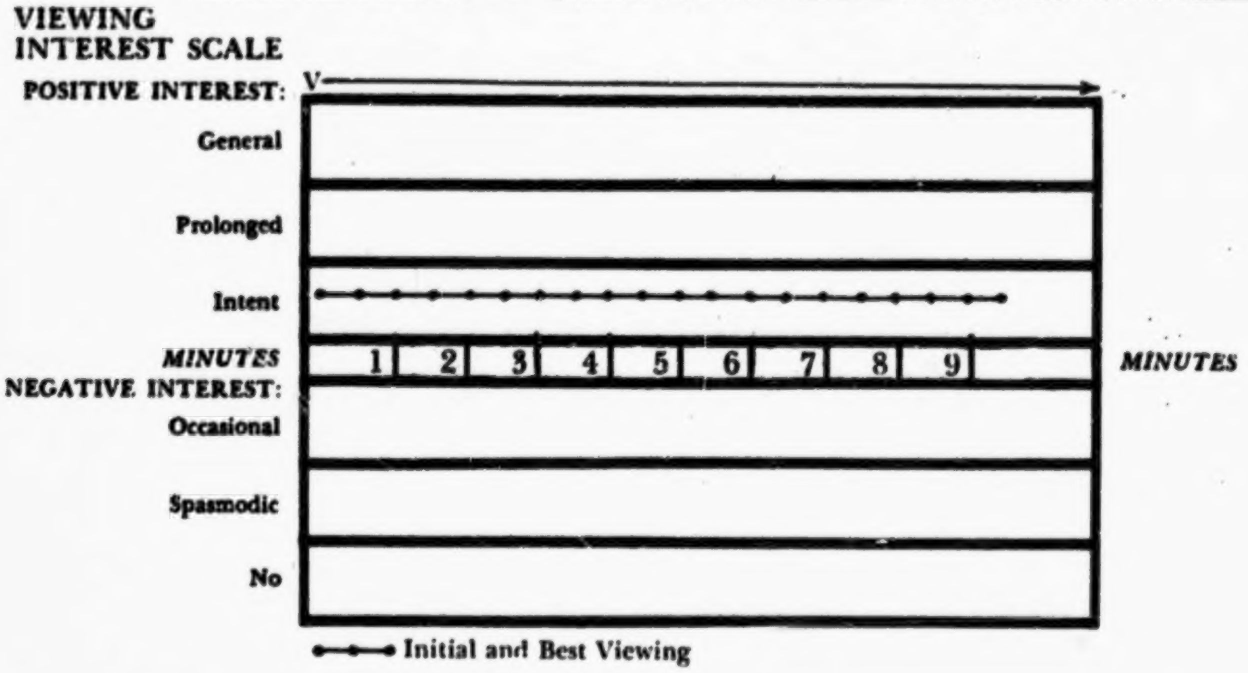
Four months later he achieved a 97% rating on the same film test. There was apparently no loss of this abstract concept during the time lapse. On the post film test #19, testing the understanding of the left and right concept and the operation of the projector, he also had a score of 97% correct. He showed perplexity and humor in his reaction when the projector shut off automatically, and really entered into the spirit of the thing, though reacting rather slowly.

When the multiple word food series was introduced this subject was extremely interested. The graph shows only straight lines on the highest interest level. This series probably held his attention because of its complexity and variation. Pretesting on this vocabulary showed an 81% rating, 4 words being missed. It was disappointing to note that he missed 2 more words on the end of unit test, receiving a 71% rating. He confused "potato chips" and "carrot sticks." His greatest difficulty came on the two-word requests, where he missed 4 out of 7. He had, perhaps, become over-confident of his ability, as he did not watch for all

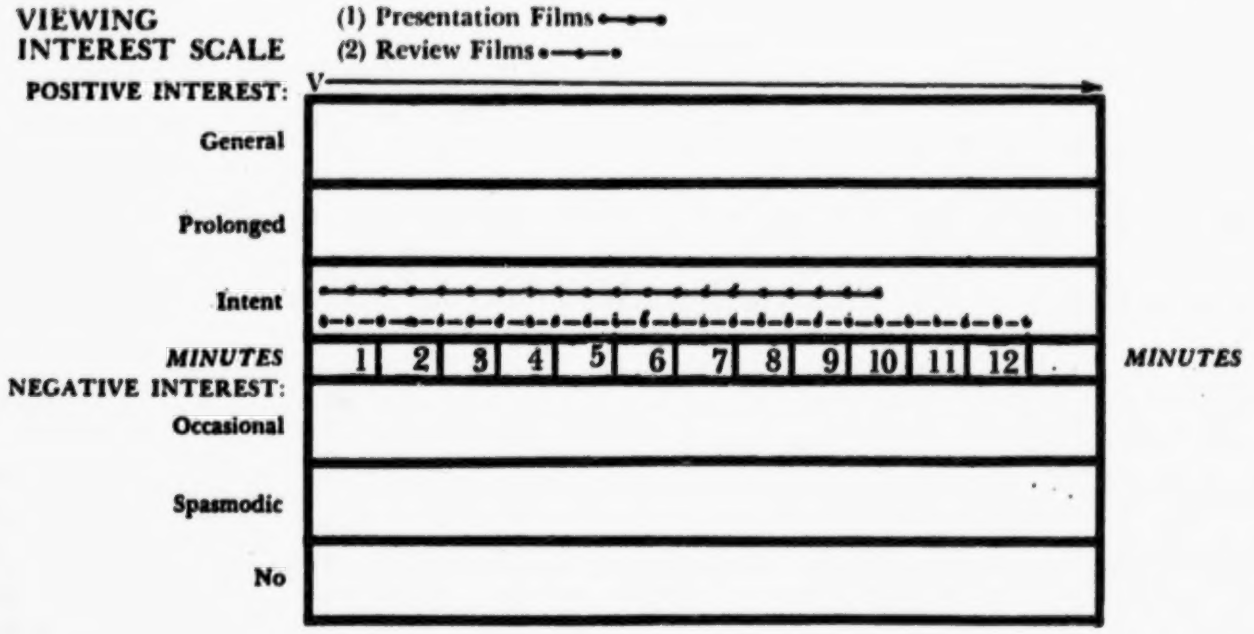
Case Study X
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 5 NO. EVALUATIONS 5

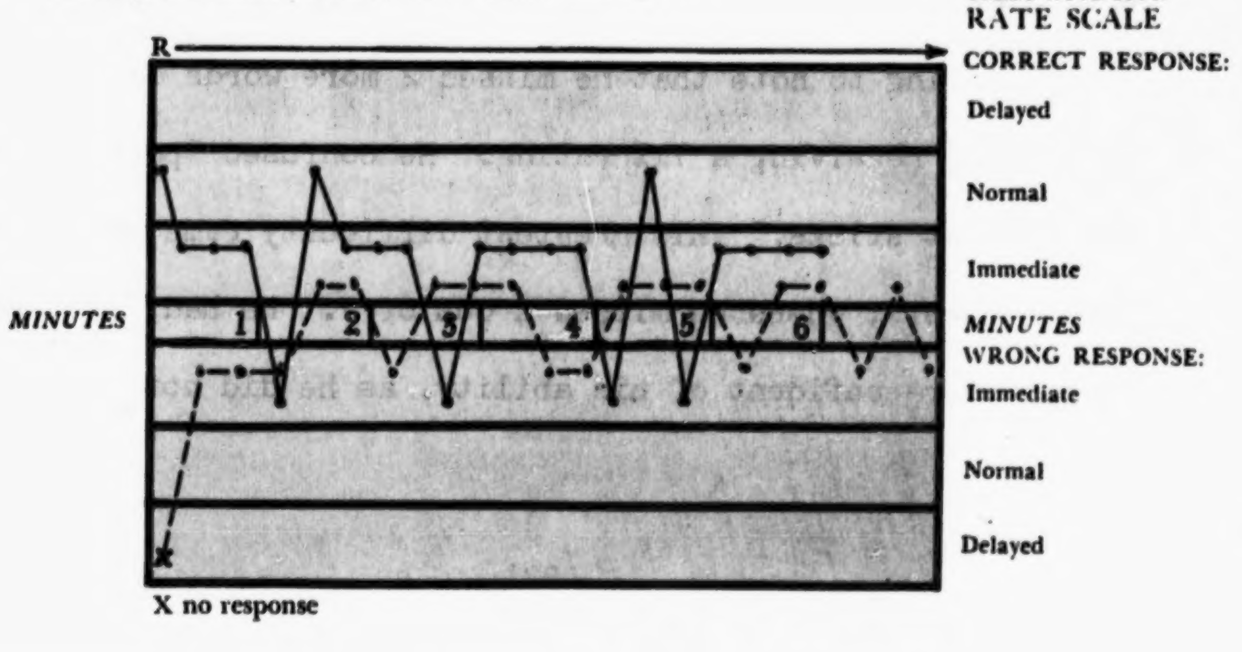


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher •—•—•
Cartridge No. 25 Different Film Teacher •—•—•



of the instructions and proceeded to answer after seeing only the first word.

On test #25, using a different teacher, he dropped to 48%. Though usually being most deliberate, he was not careful on this film test, and his results reflected this approach.

This boy presents a real challenge to the film producers, as he is capable of understanding abstract concepts, but for clarity of understanding the material must be presented without too many extraneous words in order to avoid confusion of names. The child has great capabilities for future development if the right doors can be opened. Well-designed learning films could be the key to his progress.

Case Study XI

Chronological Age:	10-5
School Achievement Level:	First
Reading Level:	First

Audiogram not available.

Student moved from city.

* * * * * *

This is a boy of ten years, five months of age. The cause of his hearing loss is unknown. He was a six-month baby, weighing only three pounds.

There are six brothers and sisters in the family, resulting in much social activity for this boy. He enjoys playing with children and uses gestures freely to communicate with them. He has very definite ideas and is learning to take his own part in disputes. When he was younger he allowed others to boss him. He is easily frustrated and sometimes withdraws.

He is made a part of family activities and enjoys going fishing with his dad, who is patient with him, though a good disciplinarian, according to the mother. It appears that the mother may be a bit fearful of letting the boy do some of the things other children of his age are allowed to do. This boy is very ingenious in constructing mechanical devices and enjoys making these devices operate by using batteries. He likes to watch television, especially wrestling shows. His TV viewing time averages one and one-half hours a day. He uses his hearing aid while viewing TV.

Case Study XI (continued)

When given the Nebraska Test of Learning Aptitude this subject rated "low average" when compared with other children his age. He uses gestures too freely and does not enunciate clearly. The teacher reports that there seems to be some block between his brain and speech center as he does not respond as well as his degree of hearing justifies. He definitely has some usable hearing. He has difficulty remembering names of things.

He has been obstreperous at times in school and on these occasions, the teacher has had to be very firm. He is now becoming more cooperative, and the discipline problems are occurring less frequently.

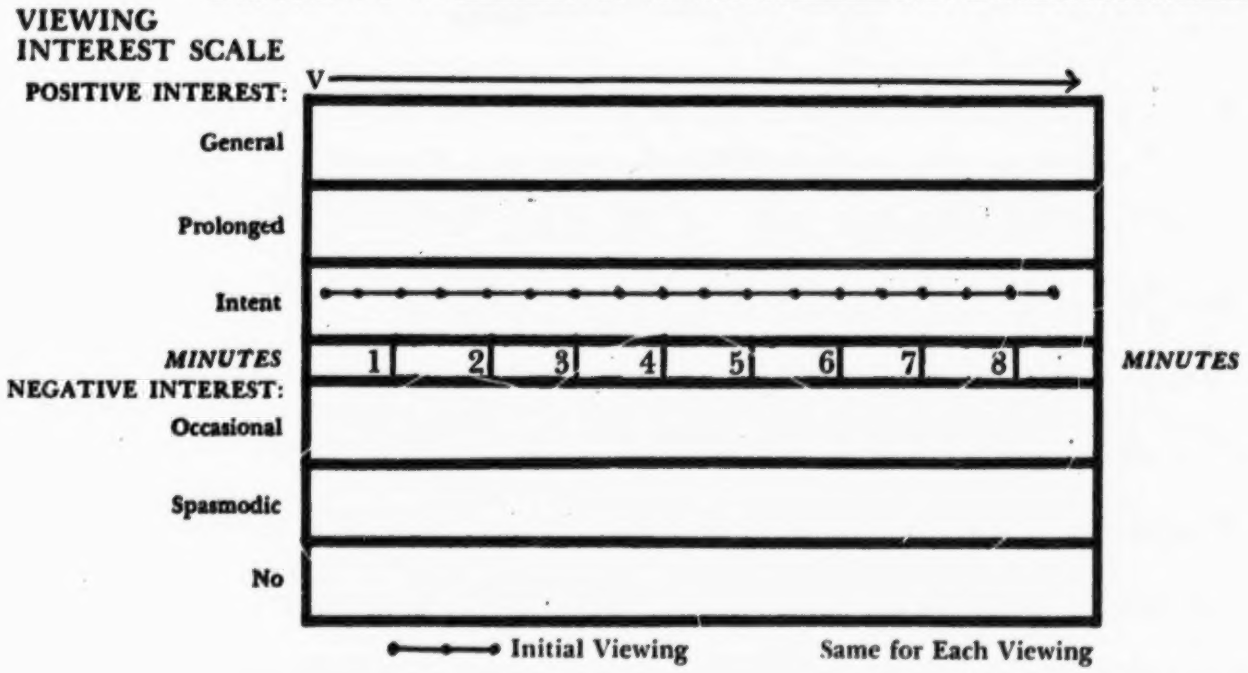
His school achievement and reading level are first grade. His language and concepts are limited. He has had four and one-half years in school, but for the first one and one-half years attendance was occasional.

In viewing the project films, this boy has been an unusual subject, for the interest level as indicated on the charts is a straight line at the highest level of interest and concentration. This viewing pattern is the same even for the review films. His interest never wavered. He seemed to be almost transfixed at times and probably would watch indefinitely if time permitted.

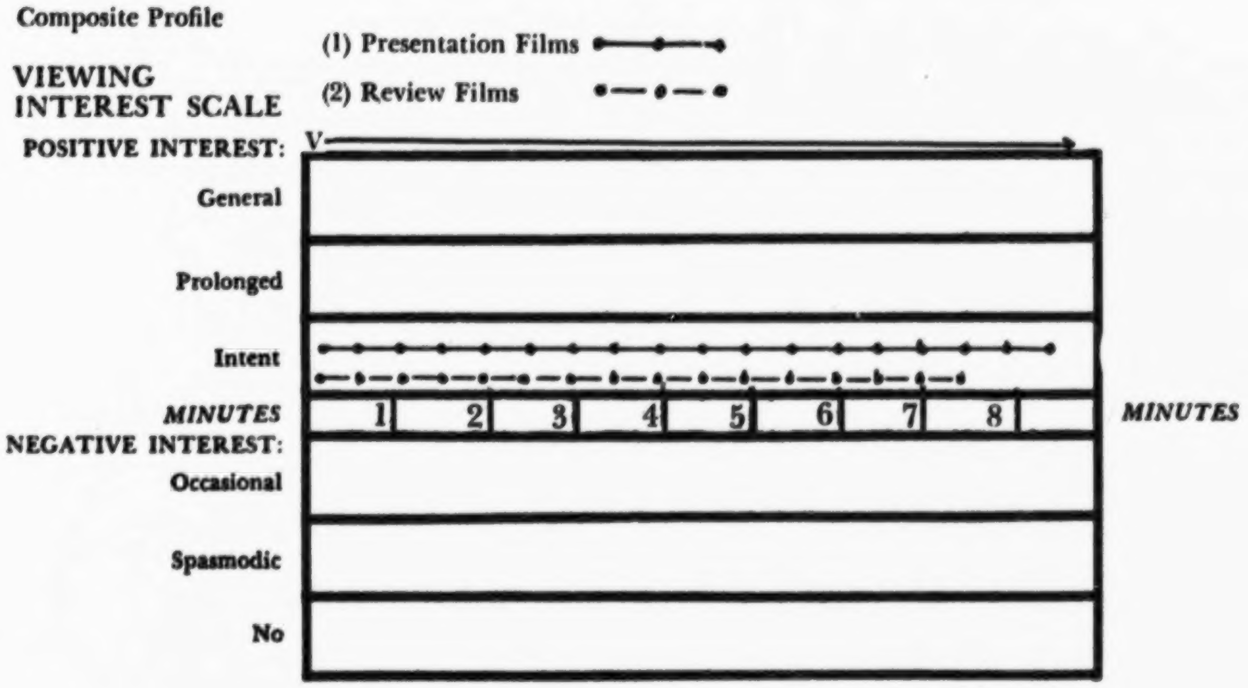
Case Study XI
EVALUATION PROFILE
WORD EMPHASIS APPROACH SERIES

Initial Film

CARTRIDGE NO. 2 NO. VIEWINGS 8 NO. EVALUATIONS 6

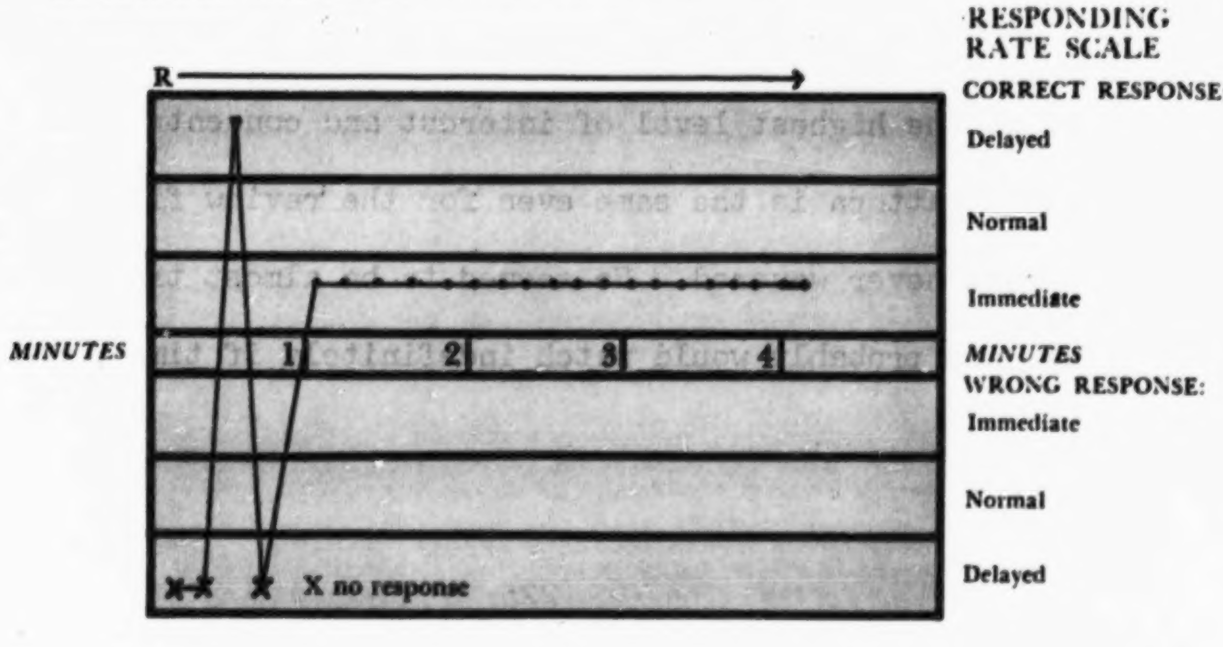


Composite Profile



Test Films

CARTRIDGE NO. 12 Unit Film Teacher



Case Study XI (continued)

He shows obvious pleasure when brought to the viewing booth. He often repeats words and watches film teacher's face closely.

He has performed well on the response films, achieving a 99% rating. His higher degree of hearing has probably helped him. On the film test, no cueing, he was confused by first instructions to place objects. He later recovered himself and responded correctly to all directions to designate objects and replaced items correctly at the conclusion of the film.

On the left-right concept films he concentrated well and appeared to have learned the concept from the film as he did not previously know left from right, according to the teacher's questioning. It appears that he also learned to lipread the words, as when viewing without sound he was able to respond correctly. His percentage rating on the four instructional films in this series was 77%. It would have been higher, but he did not respond 23 times. This may be due to his slower comprehension, his brain damage, or to the fact that he relies somewhat on hearing cues and no sound was used with these showings. He lipreads well, however. The "where" questions accounted for 18 of his failures, so perhaps that is a word he cannot lipread.

For the end of unit test film, he got 29 responses right out of a possible 31 on the difficult cartridge #18, scoring 94% accurate.

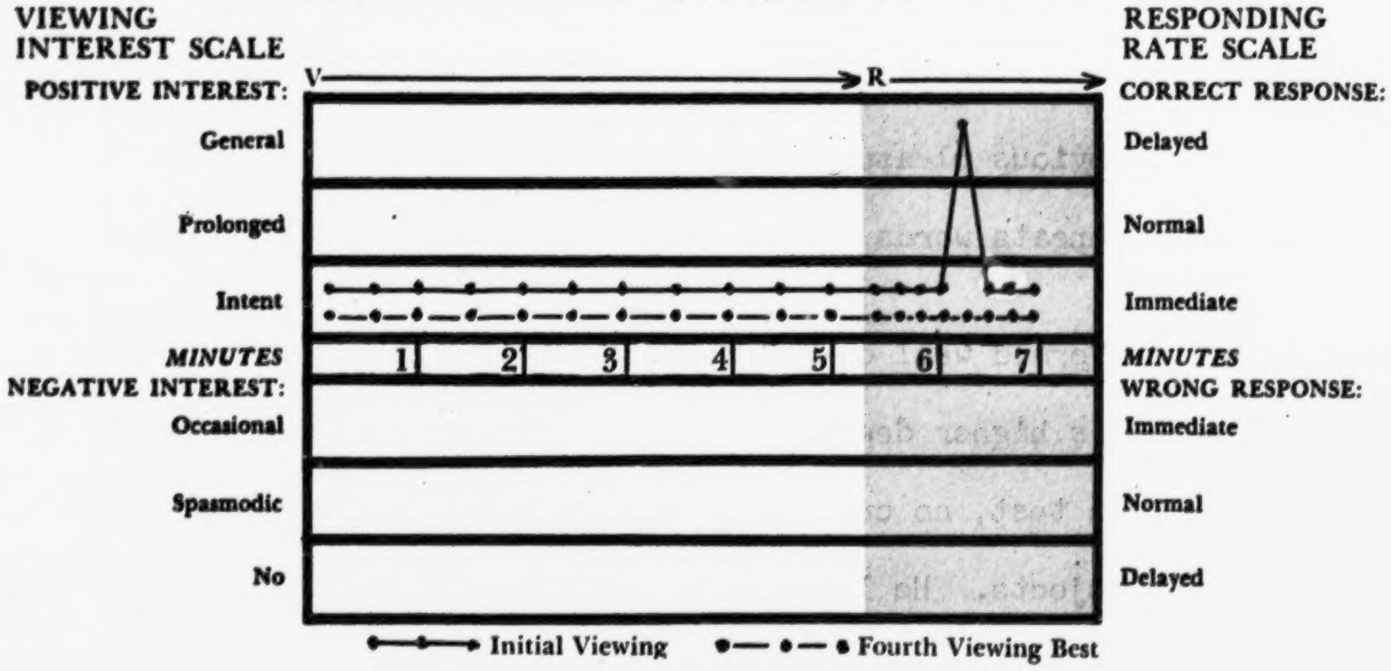
Case Study XI

EVALUATION PROFILE

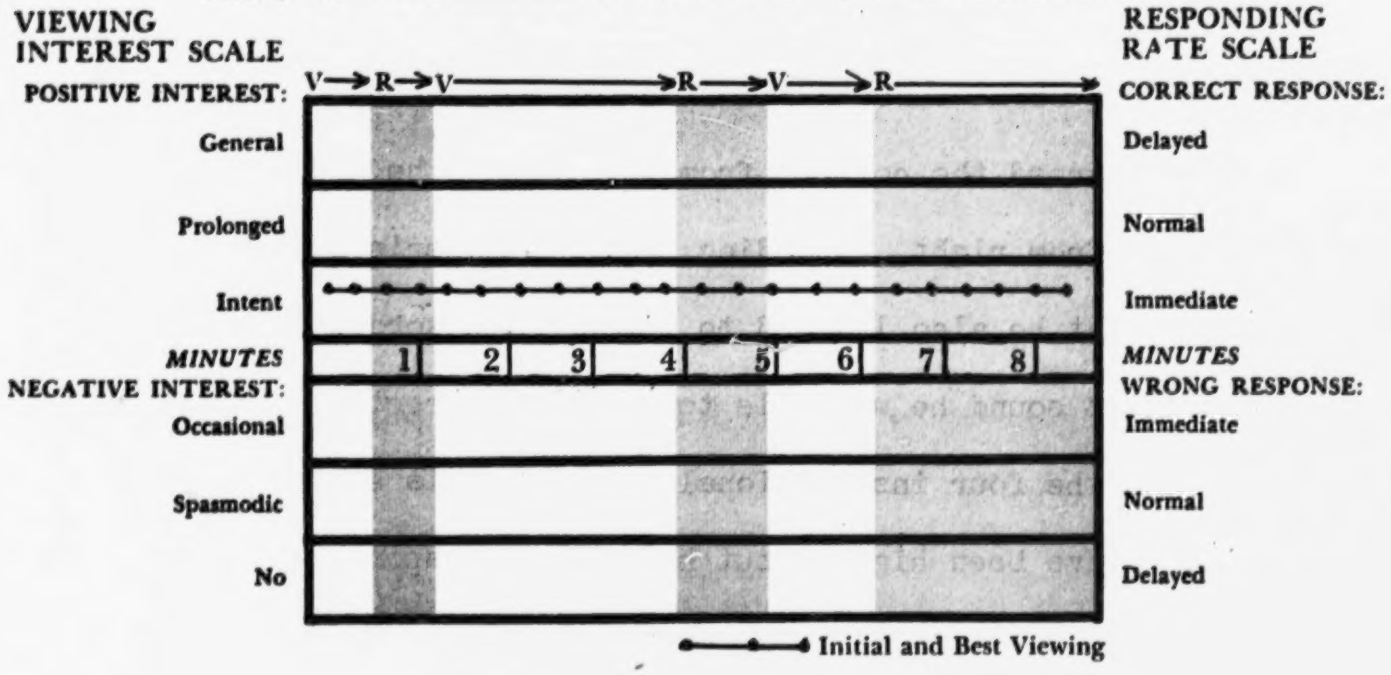
ASSOCIATED WORD APPROACH SERIES

Initial Film

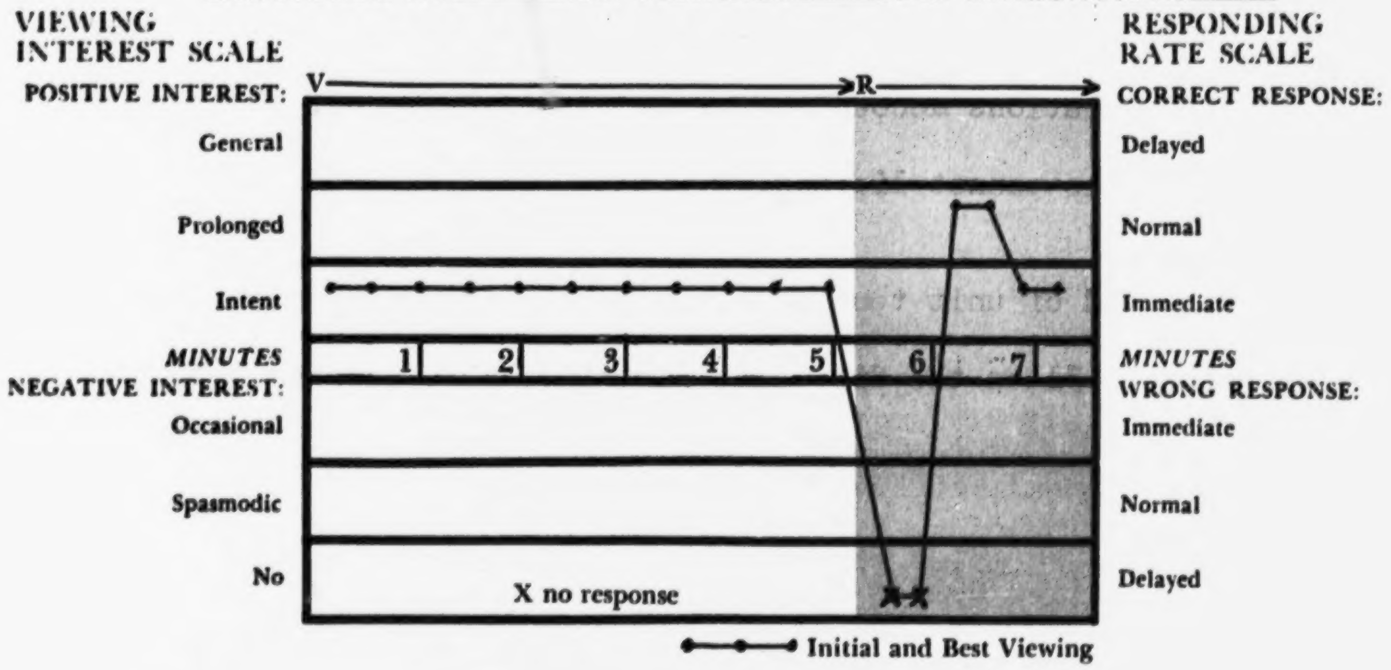
CARTRIDGE NO. 14 NO. VIEWINGS 4 NO. EVALUATIONS 4



CARTRIDGE NO. 15 NO. VIEWINGS 3 NO. EVALUATIONS 2

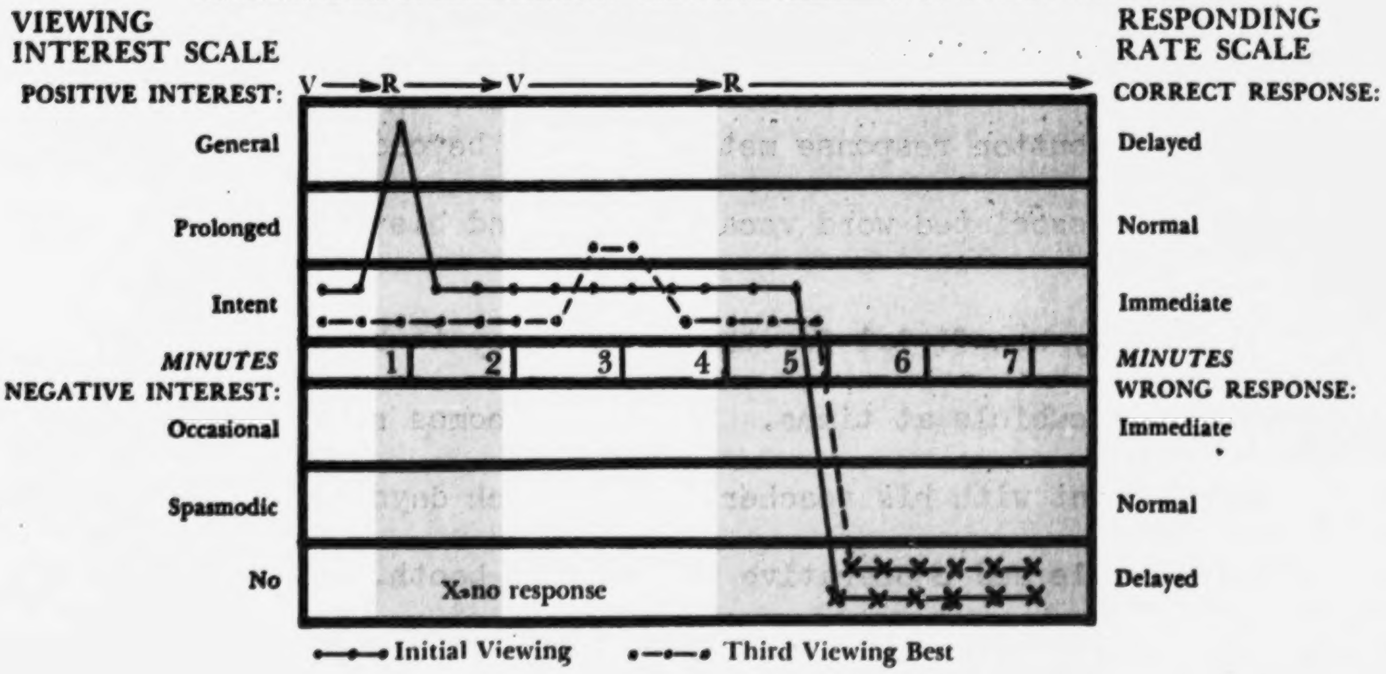


CARTRIDGE NO. 16 NO. VIEWINGS 3 NO. EVALUATIONS 2



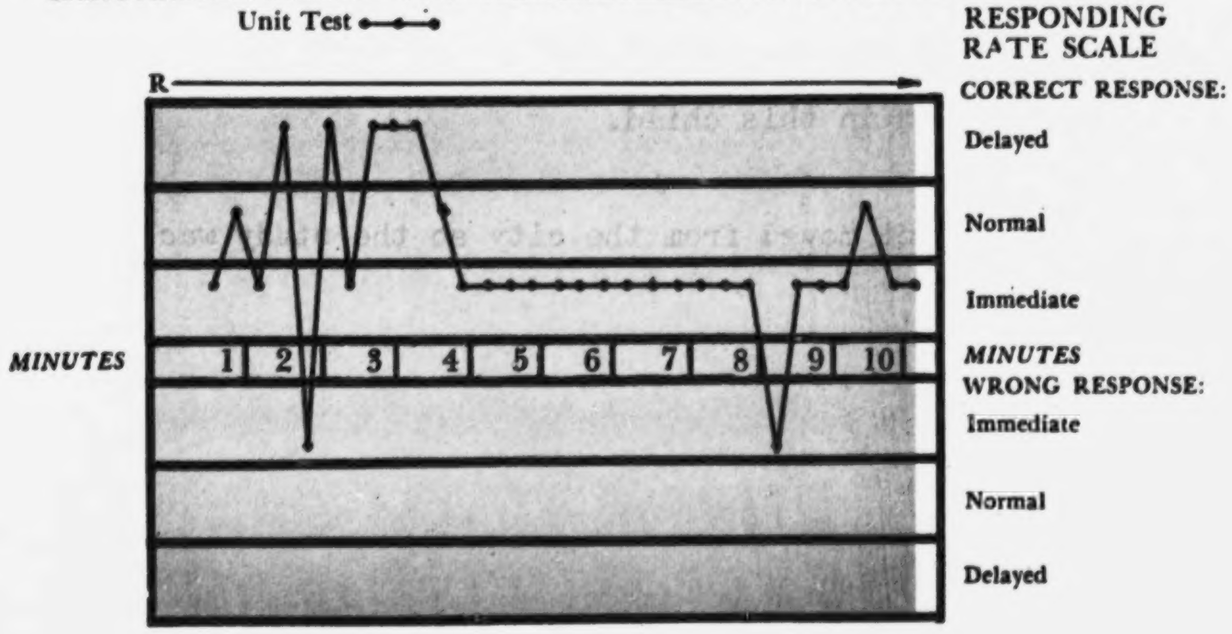
Case Study XI
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

CARTRIDGE NO. 17 NO. VIEWINGS 3 NO. EVALUATIONS 3



Test Films

CARTRIDGE NO. 18 NO. VIEWINGS 1 NO. EVALUATIONS 1



Case Study XI (continued)

The push-button response method was not beyond his comprehension nor the associated word vocabulary beyond his lipreading ability.

It is very beneficial for this little boy to be alone in the learning cubicle at times. He often becomes rebellious and belligerent with his teacher, and on such days he is, nevertheless, very docile and cooperative in the film booth. His rebellion against authority does not extend to the more objective situation of a film teacher giving directions. Perhaps repeated filmed instructions and directions might assist in the development of cooperation in this child.

This subject moved from the city so the study was terminated at this point.

Chronological Age: 6-7

CASE STUDY XII

School Achievement Level: K

Reading Level: not started

Audiogram February 1964

All responses to pure tone air conduction audiometry were questional except for a response to 100 decibels at 500 c.p.s. There does not appear to be any usable residual hearing.

* * * * * *

This six year old boy suffered a profound hearing loss from spinal meningitis when he was five and one-half years of age. He had some malformation of the skull when born and possible slight brain damage and some hearing loss. However, he previously had normal hearing in the right ear and had developed fairly good speech. At the present time there appears to be no usable residual hearing.

This child, formerly a leader in play, is showing withdrawal symptoms. He engages in more solitary play than formerly. Sometimes he teases and annoys other children in his frustration. Taking apart and reconstructing toys are his main interests. He also enjoys cars and outdoor play. Television viewing occupies one and one-half to three hours daily. The parents have a sympathetic understanding of his problem and a fine relationship exists with the boy. They plan many family activities in which he can participate.

Case Study XII (continued)

Tests indicate this child is of average potential. His language development is good except for some misarticulations and a rather nasal, high pitch speech sound.

It appears that this boy is going to become a capable lipreader. He may have developed slight ability before the meningitis occurred, as he has always had some hearing loss. When viewing the project films, using amplification, he clapped his hands in delight and said, "I can hear with this."

This boy has learned to watch teacher's face on the screen. He He was occasionally distracted by controls as his interest in mechanical objects is great.

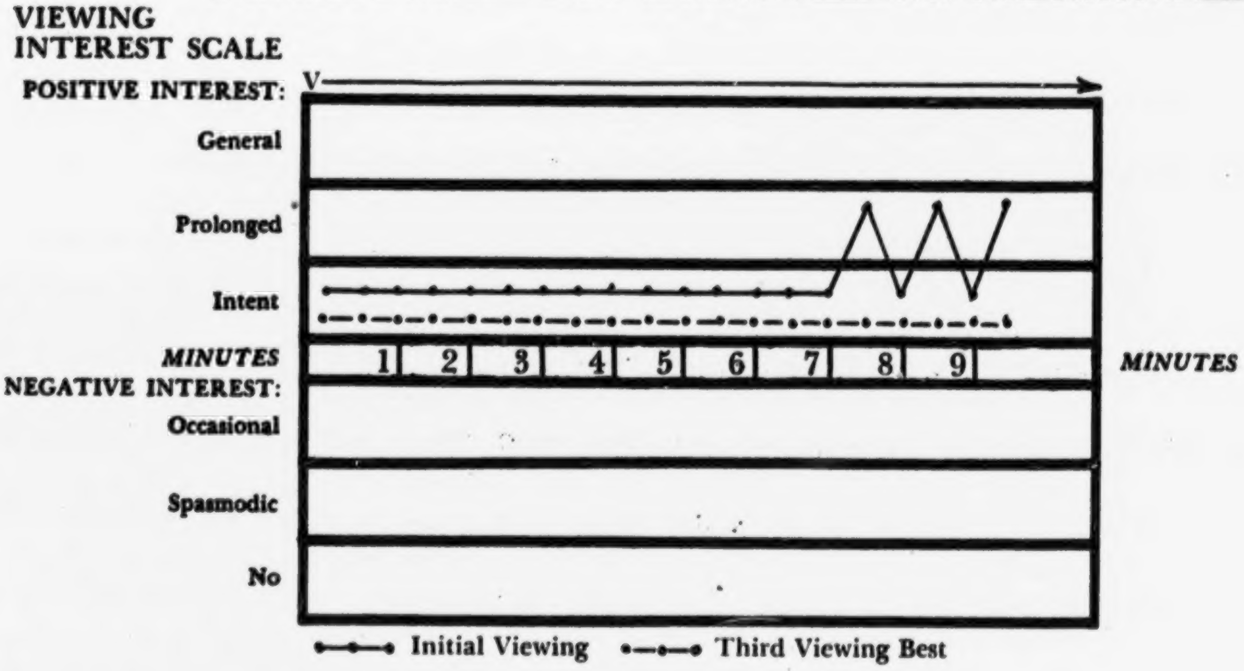
Case Study XII was enrolled in the hard of hearing unit in the spring of 1964. It was decided to include him in the project study the following fall, starting him on the food series with the other children. He had viewed previously many of the single word emphasis films under the direction of the classroom teacher, and showed some aptitude for lipreading.

His composite attention level on this multiple word series was at the intent to prolonged levels with one drop to general interest. After he had viewed a film several times he frequently became restless and easily distracted. There was less distraction whil viewing the later films than during the first one.

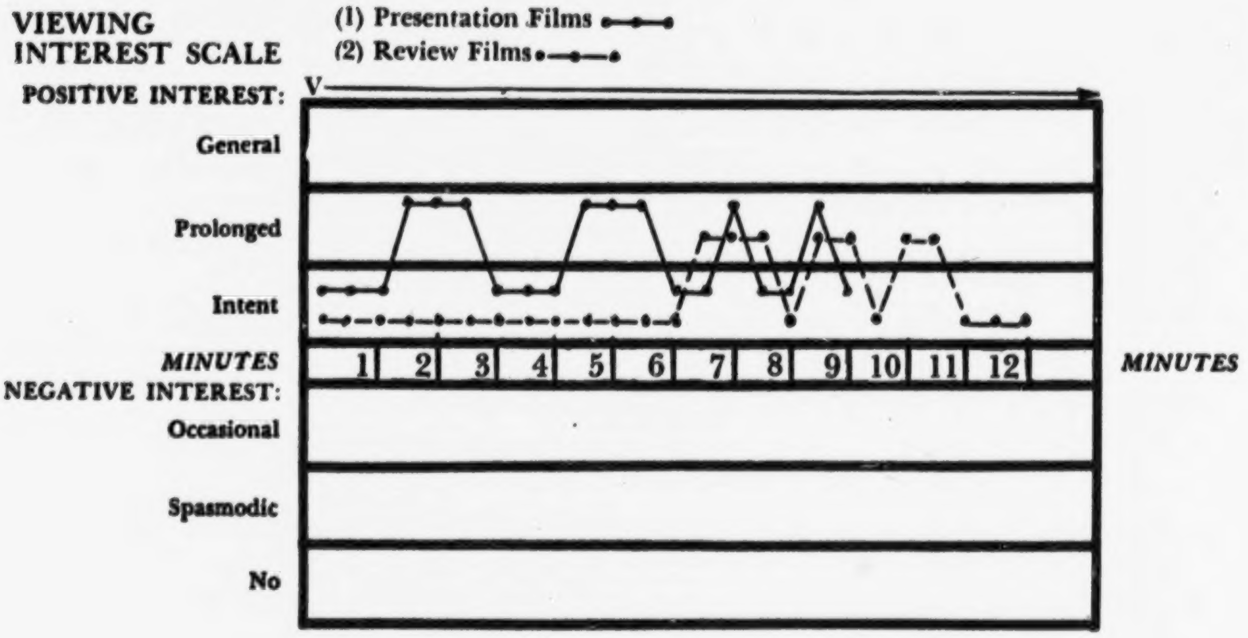
Case Study XII
EVALUATION PROFILE
MULTIPLE WORD APPROACH SERIES

Initial Film

CARTRIDGE NO. 20 NO. VIEWINGS 9 NO. EVALUATIONS 9

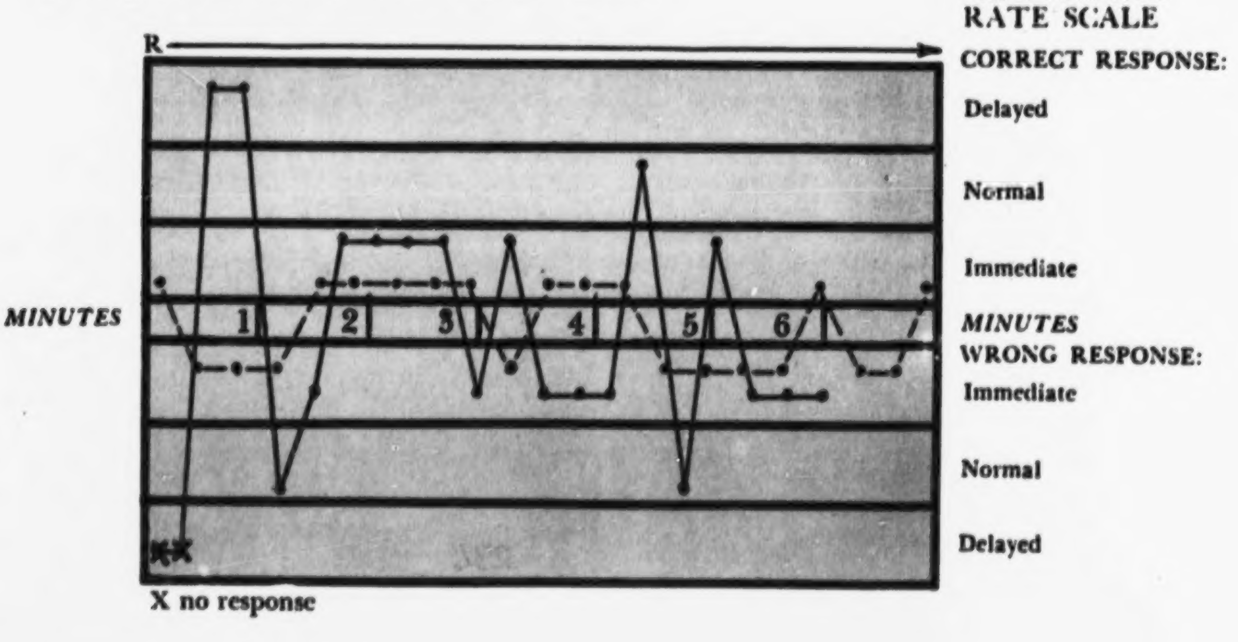


Composite Profile



Test Films

Cartridge No. 24 Unit Film Teacher
Cartridge No. 25 Different Film Teacher



Case Study XII (continued)

One cause might be the fact that he was rather restless at the start of the school term.

On the pretest (#24) this boy scored 43%. After viewing the teaching films he scored 62% on the same film test, a 19% gain in skill. He seemed to mark at random at times and did not take time to scrutinize all four illustrations.

When tested on cartridge #25, using a different teacher than had appeared in the teaching films, he dropped to 48% accuracy. Again he was not discriminating in his selection. Further testing is needed to determine the cause of this poor score since he had rated much higher on test #24. This may indicate that adaptation to different people's manner of forming words and speech habits are too difficult for this beginner.

This subject seemed to be reasonably adept at acquiring lipreading skill and will probably progress rapidly when he has had more training.

Appendix A

Section 4. Observation Films Analysis

One phase of the evaluation procedure in this study was the recording of the children's reactions on motion picture film. These twenty-seven observation films are a documentation of the Case Studies reported in the previous section. As described in Chapter II, Project Design, these are split-screen films in which the original instructional film appears on the left half of the film and the filmed reactions of the child on the right half. In other words, the left image is the same film that the child is observing on his 8mm projector in the booth. The split format permits the researcher or educator to study in juxtaposition the stimulus (film teacher) and response (student).

These films were taken through one-way mirrors from inside the observation booth, thus using a "hidden" camera. To compensate for the loss of light through the one-way mirrors, extra flood lights were mounted in the student's booth. The lights and one-way mirrors were a distraction to the students until they became adjusted to their surroundings.

The research design permitted the children to wear earphones during their study of the instructional films. The intent was to model normal conversational situations and tutorial teaching situations as closely as possible in a filmed treatment. A microphone was attached to each headset and was employed occasionally when the film teacher asked for a verbal response. In all film tests, however, the earphones were removed and the child was required to respond from his interpretation of this lipreading lesson. An evaluator was also present at each filming session to record the child's reaction in the form of a graphic profile for the case study report.

The first four observation film provide an overview of the typical reactions of the children to their initial exposure to the filmed materials and instructional procedure. Sequences were selected which give a range of responses representative of the group reaction. Film No. 4 shows the behavior of four students to the second viewing of the first film which was repeated as part of the initial viewing. The plan for the remainder of the study was periodically to film the reactions of the children to new materials and situations which required a variety of types of responses. At the same time the observation films were to document the progress of the study. At each observation film session all the children in the study were photographed. The footage was printed and studied by the project director and production staff. The profiles prepared by the project evaluator were also analyzed. On the basis of the profiles, typical or representative responses were determined. Then the footage showing this representative behavior was chosen to be included in the report. Consequently, examples of the best responses were not produced as a finished film, nor were the poorest reactions. Verification of this fact can be made in a study of the data furnished in the Case Study section.

Appendix A

After the first four films, all filmed reports are complete, following a selected child through the entire film. No editing of the footage was allowed. Periodically, a black flash occurs on the right half of the screen. This does not indicate omission in the footage, but is an expansion of the observation film. All of the child's reactions are retained. Due to production problems, it was necessary to lengthen the right hand film in order to keep it in synchronization with the left half. Basically, the problem developed because the child was being photographed on 16mm film while he was watching an 8mm instructional film. Since the two machines were not synchronized, a variation occurred when the two films were printed as one in the split screen format.

The observation films are numbered sequentially in the order in which they were filmed on the study. The sequence reflects the development of the study and the progress of the children. One disadvantage to this system is the fact that films taken at the end of the study are actually delayed tests of material taught early in the experiment. Reference is made within the text of the film analysis when comparisons with other films should be made or the observation is part of a film series. For your information, the films are grouped below according to the series being studied.

Appendix A

Film Index

Single Word Emphasis Approach		Associated Word Emphasis Approach		Multiple Word Emphasis Approach	
1st Series		2nd Series		3rd Series	
Lesson	1	Unit Test	9	Lesson	14
Lesson	2	Unit Test	10	Lesson	15
Lesson	3	Post-test	12	Pre-test	16
Lesson	4	Final Test	21	Pre-test	17
Review Test	5	Final Test	22	Unit Test	18
Review Test	6			Unit Test	19
Unit Test	7			Post-test	23
Unit Test	8			Post-test	24
Post-test	11			Post-test	25
Post-test	13			Post-test	27
Post-test	20				
Post-test	26				

Summary comments about each of these twenty-seven observation films follow.

The first series required the student to lipread the film teacher and indicate his understanding by pointing to objects in the booth. The second series checked the student's comprehension by having him respond on a light board. The final series measured the results with a multiple-choice test in the form of a pictorial booklet. The student marked his answer with a grease pencil by drawing a circle around the proper item.

Appendix A

Observation Film #1

Lipreading Lesson #2
Case Study #3

This film shows the initial viewing of Lesson #2 (car) by Case Study #3. The surroundings, machine, and film are being seen for the first time. Earphones were permitted and the mouthpiece was in place. The film shows the complete viewing by this five-year-old girl, who was later dropped from the experiment due to the fact that she moved away from the city.

This is an excitable child and her reactions were strong. She was very surprised to see her own teacher's image on the screen. She watched intently for a few moments, then tried to call her teacher to tell her all about it. She finally pounded the booth-divider in agitation. Occasionally she talked into the mouthpiece and once tried to look over the bottom edge of picture to see more. She finally settled down and looked from teacher's face to car, giving a good example of proper procedure for lipreading these lessons. Later she became distracted by mirror, mouthpiece, and lights, but was quite attentive by end of viewing time.

Observation Film #2

Lipreading Lesson #2
Case Study 5
Case Study 8

This film shows the initial viewing of Cartridge #2 (car) by Case Studies 5 and 8. Earphones were used.

Keen anticipation and excitement were obvious in the face of the little girl as she saw the picture for the first time. Her eyes sparkled and she was very attentive, at times nodding in agreement, clasping her hands in delight, and once holding out her own hands to the film teacher. Her attention was almost unwavering until she finally glanced at her surroundings and became interested in the physical make-up of the viewing booth. Her attention remained high throughout most of the viewing, however.

The boy (#5) also paid close attention, occasionally smiled and nodded in agreement. He watched carefully but was not as demonstrative as the girl. His eyes scanned back and forth, indicating a pattern of movement to his observation.

Lipreading Lesson #2
Case Study #1
Case Study #11
Case Study #4
Case Study #2

Observation Film #3

The reactions of four children are captured in this film, which is the initial viewing of Cartridge #2 (car) by these students. Earphones were used.

Case Study #1, the youngest of the group, showed high interest. She verbalized the word "car." She finally explored her surroundings and noticed her reflection in the mirror.

Case Study #11, oldest of the group, showed intense interest. His attention remained unwavering throughout the viewing.

Case Study #4 was interested, but was not as demonstrative and intense as some of the children. She found the mirror slightly distracting but, on the whole, watched closely.

The last viewer on the film, Case Study #2, exhibited great interest also. Her eye movements were rhythmical and indicated a pattern of viewing. She was most attentive, and showed some interest in the new surroundings. As this was the first time in the booth for the children, this reaction was expected.

Lipreading Lesson #2
Case Study #7
Case Study #6
Case Study #10
Case Study #9

Observation Film #4

The decision was made to allow the children to view Lipreading Lesson #2 two times; therefore, some of the subjects were filmed during their second viewing. This film shows the second viewing of the initial showing of Lesson #2 (car) by four children, all using earphones. As can be seen, more restlessness occurred during this viewing. This is an especially interesting picture, as the reactions of two multiply handicapped youngsters are shown.

The first boy (#7) is handicapped by cerebral palsy and had difficulty controlling his random movements. He was very interested but unable to sit still, and bobbed about during viewing. Excitement and anticipation were evident on his face. He is a demonstrative youngster and smiled at the face of his familiar teacher. His random movements are quite noticeable on this film.

Case Study #6 is also multiply handicapped. He does not have difficulty with random movements, but is a victim of mild cerebral palsy also. He exhibited interest in the picture, but stretched with the fatigue of sitting still so long. He clowned a bit and seemed not sure of the purpose of the viewing.

Another boy (#10), deafened after acquiring speech, had a quizzical expression. He verbalized occasionally. He was distracted by the mirrors and bright lights overhead.

Finally, a wiggly little boy (#9) is shown. He fingered his earphones and clowned in mirror. His interest increased as the viewing progressed and he became quieter and more attentive.

Lipreading Lesson #5
Case Study #6
Case Study #10
Case Study #11

Observation Film #5

This film records three boys' reactions to their first viewing of Lipreading Lesson #5 (car-ball). This is a teaching response film. Earphones were used.

Case Study #6 showed high interest and a great desire to be correct in his responses. He followed teacher's directions in placing and designating objects and was very attentive.

Case Study #10 repeated some of the words and was also most attentive. He followed the directions well.

Case Study #11, while not always a cooperative boy in the classroom, was very meticulous about following directions in this test. He quickly corrected one error in designating objects. His face showed great enjoyment of the test and pride in his ability.

The mirrors at the side proved to be no distraction when responses were required, and even obstreperous children quieted down and did their best during testing. There is visual cueing by the teacher for the placement of the items but cueing is not used when designating objects. This film also demonstrates immediate reinforcement of correct response in the learning process.

Lipreading Lesson #8
Case Study #2
Case Study #7

Observation Film #6

The test over the single word series (Lesson #8) is shown in this film. The words "car," "ball," and "doll" are featured, and the responses of two children are recorded. Earphones were used. Some cueing is given on placement of objects.

Case Study #2, a little girl, revealed great enjoyment in the opportunity to respond to testing. She was very attentive. Her reactions near the end demonstrate delayed response, probably occurring because in the previous testing film the children were told to place objects after the teacher had done so, but in this test they were asked to place them simultaneously; therefore, they seemed to have become conditioned to delaying their response.

Case Study #7 did well on this test. This is a good example of the student following the lipreading conversation and directions. The pacing or timing of this film was most appropriate to the reactions of the learner. This child's random movements demonstrate the difficulty of motor manipulation by persons having cerebral palsy. His motivation to succeed was high and his quality of lipreading excellent.

Lipreading Lesson #11
Case Study #2
Case Study #5

Observation Film #7

A film test of the single word series over "car-ball-doll-tractor" (#11) is recorded here. For the first time, no earphones were used. Some cueing was given on placement of the objects.

Case Study #2 is shown first, loading the machine and making the required responses. She appeared very pleased to have a chance to use her ability and enjoyed the test. Her attention was unwavering, except in one instance when she was looking down and failed to see the lipreading question.

A boy (#5) appears next and demonstrates a typical reaction to the response films. He watched very closely, followed directions carefully, and tried to do his best. He verbalized occasionally. In placing the car he gave an imitated response pattern, anticipating his teacher's verbal directions.

Lipreading Lesson #11
Case Study #6
Case Study #8

Observation Film #8

This film shows the responses given on Lesson #11 (car-ball-doll-tractor). No earphones were used, though this fact did not appear to bother the children. An imitated response pattern is shown clearly here, as Case Study #6 did not wait for verbal instructions. He was very eager to do well and anticipated the directions after seeing the film teacher place objects. The pace of presentation may be too slow in this particular film.

Case Study #8 is shown next. She "emoted" from the very beginning of the test. Although she tried hard and did very well on the test, she shook the ball in its box, clowned in the mirror, and showed exaggerated facial expressions and gestures throughout the film. This student's lipreading ability is above the level required to speechread this simple vocabulary.

This film does demonstrate what happends when the child is distracted by outside influences, such as the mirrors in the booth.

Observation Film #9 — **Lipreading Lesson #18**
Case Study #6

Cartridge #18 is shown, picturing Case Study #6 responding to the associated word series of "left" and "right." No earphones were used. This film pictures the initial test.

The little boy shown here wanted so badly to do well that at first he followed the directions given to the film child. He even imitated one error made by her although he had previously indicated he knew the right answer. After imitating a few of the responses of the film child, he got one correct by himself. His joy was very evident by gestures which communicate, "I got one right." He missed some responses because he did not watch the teacher's lips closely. He was fascinated by the light box and spent too much time looking at it. Small lights on the side of the box indicate the response made.

The last portion of this film is a good example of reinforcement of correct response in a learning situation.

Lipreading Lesson #18
Case Study #4

Observation Film #10

Lesson #18 of the associated word series on "left" and"right" is shown here. This is the initial test given. No earphones were used.

Case Study #4 was very attentive and interested in following instructions. She showed some confusion in the first part of the film resulting from lack of clarity in directions, a flaw inherent in this particular film. This film demonstrates the importance of clear directions in teaching as the child improved in response as the directions became more understandable.

This is a good demonstration film as the subject voluntarily verbalized occasionally, and both manual and verbal responses to instructions are demonstrated.

Lipreading Lesson #12
Case Study #2
Case Study #7
Case Study #4

Observation Film #11

Film #11 shows three children viewing Lesson #12 (car-ball-doll-tractor), the single word response film, one month after they had completed the study series. No cueing and no sound are used in this response film featuring the classroom teacher. Only the teacher's face is visible.

Case Study #2 seemed confused at start of viewing. She apparently was awaiting visual cues. She gradually became aware of what was expected and proceeded to make appropriate responses. Altogether she failed to respond four times. She placed the objects correctly at the close of the film.

Case Study #7, the cerebral palsied child, started responding at once and did well, making only one error. He watched the teacher's lips closely and proceeded according to her instructions.

Case Study #4 also did well from the beginning of the film. She watched the teacher carefully and made only one error. She failed to respond once.

Lipreading Lesson #18

Observation Film #12 Case Study #7

This film records the post-test over the associated word series, featuring the words "left" and "right." It was taken four months after the initial test. (See O.F. #9 and #10.) No earphones were used, this being a test of lipreading only. The complete viewing was filmed, using Case Study #7 as the subject. The correct button on a light board must be pressed to record the response of "left" or "right." The words cannot be seen on the film, but a tiny light is visible on the side of the box indicating which response was made.

The film records high interest on the part of the multiply handicapped boy. He showed a high quality of lipreading and gave verbal responses where required. The pictures show much uncontrollable movement by this boy, but with great effort he was always able to press the button in time. When the highway turn sign was shown, this child held his thumb in such a manner it appeared he was "thumbing" a ride, although the gesture indicated direction.

Lipreading Lesson #12
Case Study #2
Case Study #7
Case Study #4

Observation Film #13

This film shows three children being tested over lipreading ability gained from the single word series. Lesson #12 is conducted by the classroom teacher and no cueing or sound is used. The objects, upon which the test is based, are not visible in the film. The learner must rely on his lipreading ability. The filmed post-test was given five months after the completion of the instruction. (See O.F. 20 and 26.)

Case Study #2 appears first. She was very attentive, showing pleasure on her face. She failed to follow the precise directions in the opening sequence, but responded otherwise in a very satisfactory manner. She made three errors.

Next, #7, the cerebral palsied child, is shown, trying very hard to do well. He paid close attention to his film teacher and responded with a high degree of accuracy. He held up the toys to show the film teacher that he knew the answers. He made no errors but failed to respond twice. He had difficulty managing the placement of one object at the end of the film.

Case Study #4 was very sober and intense. She responded quietly but efficiently, giving a perfect performance with no errors. This is a good demonstration of concentration.

The children had retained their lipreading ability of the single word series very well.

Lipreading Lesson #20
Case Study #1

Observation Film #14

The study lesson of the multiple word series having to do with the breakfast vocabulary is shown on this film. Earphones were permitted. The guest teacher conducts this series of lessons.

This lesson introduced this child, youngest of the group, to lipreading of a higher level than she had previously studied. She seemed fascinated and watched the pictures intently. Her eye movements, from teacher to foods and back to teacher, show a desirable pattern of viewing. She verbalized a couple of times during the session. This film records an amazing study in concentration for a five-year-old child.

Lipreading Lesson #20
Case Study #8

Observation Film #15

The initial viewing of the multiple word series having to do with breakfast vocabulary is recorded on this film. This lesson was presented after a lapse of nearly four months due to vacation, yet interest was still very great. The complete viewing of Case Study #8 was filmed, demonstrating a typical study session.

This cooperative little girl showed high interest throughout the viewing. She nodded in agreement at times. This lesson presents lipreading at a more complex level and was a greater challenge to this bright child than were the two previous series.

Lipreading Lesson #24
Case Study #5

Observation Film #16

This film pictures the initial test over the multiple word series concerning foods. Case Study #5 is seen taking a pre-test at the start of the study lessons. The complete test was recorded, including the instructions for marking the correct answers. The guest teacher is used. No earphones were allowed during testing.

The child is seen circling the food pictures in a test booklet as the teacher says the words. Absolutely no cueing is used--this being pure lipreading.

The subject met the challenge of the new material well and remained interested throughout. No time to explore the booth during this one!

Lipreading Lesson #24
Case Study #12

Observation Film #17

This film presents a child who was added to the group at the time of starting the multiple word series. He had suffered a hearing loss after having learned speech, but now needed to develop his lipreading skill. This shows the pre-test over the series, using the services of the guest teacher. No earphones were used.

This child, usually a restless boy, was interested in performing correctly and was attentive except for a couple of slight distractions. He made one of the lowest scores of the group on this pre-test, indicating the need for lipreading instruction.

This film gives a fairly good view of the test booklet.

Lipreading Lesson #24
Case Study #5

Observation Film #18

The end of unit test over the multiple word food series is shown here. (See O.F. 16 & 17 for pre-test)(See O.F. 23 & 24 for post-test.) This film shows the guest teacher conducting the test, which requires the child to circle various food items in a pictorial booklet. No cueing was given--a pure test of lipreading skill.

Case Study #5 was very deliberate in his approach. He gave the task his undivided attention as was typical of all children when taking the tests. This was true even of the response films of the single word series.

Lipreading Lesson #24
Case Study #12

Observation Film #19

This film depicts the end of unit test of the multiple word series. using the guest teacher. (See O.F. 16 & 17 for pre-test.) (See O.F. 23 & 24 for post-test.) No cueing and no sound are used as the child marks the correct answers in a pictorial test booklet.

Case Study #12, who was added to the study in the fall, is the subject. He looked at the teacher's face for instructions, then proceeded to carry them out. He continued to watch closely, apparently tiring a bit near end of viewing. He showed an improvement of 19% over his pre-test on this series. He had just started lipreading lessons in the fall after a hearing loss that occurred the preceding winter.

Appendix A

Lipreading Lesson #13
Case Study #4
Case Study #7

Observation Film #20

In this film, the subjects are responding to Lesson #13 which tests lipreading ability based on the single word series. No visual clues are given and no earphones used. The guest teacher gives the instructions, providing a measure of the students' ability to lipread an unfamiliar teacher. (See O.F. 11 & 13.)

Subject #4 was very attentive, responding quickly and correctly. She responded verbally once.

Subject #7, a multiply handicapped boy, was so intent on making correct responses that he held up many of the objects for the teacher to see. He was attentive, though he had much difficulty with muscle control.

Lipreading Lesson #19
Case Study #8
Case Study #6
Case Study #4

Observation Film #21

Film #21 shows the children's own teacher giving instructions requiring the overt response of holding up the left or right hand as requested. The film progresses to a sequence utilizing the autostop feature of the projector. The student must lipread the instructions to turn the machine on, otherwise the test ends for him at this point, as the projector automatically stops. Finally the child is required to turn the machine on and the teacher designates which hand is to be used. This complex response film was designed to separate skilled lipreaders from the average lipreaders of this age group.

Appendix A

The first study (#8) shows a girl following instructions carefully. She held up the correct hand as directed. Then the instructions to turn on the projector were given and the machine stopped. She watched very intently and did as directed. An amazed look came over her face and she leaned forward in closer attention as she proceeded to respond.

Then the two directions were given and she continued to turn on the projector and with the correct hand. She turned it off at the end but with the wrong hand.

Case study #6 also watched very intently, carefully following instructions. He was perplexed when the projector stopped, and he had to get help. He turned it on after being told to do so, and then continued to turn it on when directed. When told to turn it on with a certain hand, he followed only the first half of instructions. The film does not show the projector being turned off.

Case Study #4 is shown next viewing the autostop portion of the lesson. When directed to turn projector on, it appears she left the booth. She had to have help and the projector was turned on for her. Thereafter she proceeded to turn it on herself.

When two directions were given she used the wrong hand. She turned it off at close with the wrong hand.

Appendix A

Lipreading Lesson #19
Case Study #10
Case Study #7
Case Study #2

Observation Film #22

Observation Film #22 is a continuation of #21, the film demonstrating the autostop feature of the projector. The reactions of three children are depicted. The motions and facial expressions of the cerebral palsied child make this an especially appealing and interesting film.

Case Study #10 closely followed the instructions to designate left or right hand. He appeared very pleased with himself. When the autostop feature was introduced, he proceeded to turn on the projector again as directed. He continued to do so, scratching his head as he realized that this was truly an amazing situation! His facial expressions are interesting to observe here.

When given two directions he proceeded to follow them after some initial perplexity using wrong hand once. He turned off projector correctly at close.

The multiply handicapped child is shown next (#7). He followed the instructions well, though with many random movements. He was very eager to perform correctly. He made an error and corrected it.

When the autostop feature was used, he turned on the machine, smiling with pleasure. The second time he turned it on he expressed joy overwhelming! When two directions were given he operated correctly, turning the projector off at close with correct hand. He made no errors.

Case Study #2, a five-year-old girl, also watched closely and followed directions. When first being directed to turn on the projector she waited a long time, then had to be shown what to do. After that she did it herself.

When two directions were given she followed the instructions to turn projector on but ignored the second half of the instructions, therefore used the wrong hand twice. She turned it off correctly at the end.

Lipreading Lesson #25

Observation Film #23 — Case Study #5

Case Study #5 is shown taking the pictorial foods post-test, wherein is presented a different teacher and a different response pattern than used in Lipreading Lesson #22 administered earlier. (See O.F. #18 & 19). No cueing is given.

Case Study #5 was very attentive and interested. He selected the pictures with care and followed instructions painstakingly.

Lipreading Lesson #25
Case Study #12

Observation Film #24

Lesson 25 is shown here. The pictorial test over foods is given but a different response pattern is required than in the previous test. (See O.F. 18 & 19.) The classroom teacher, a different one than taught the series, administers the test.

This boy is the one who was added to the study in the fall. He tried hard and was attentive but did not do very well. At one point he caught a mistake and put his hand to his head in dismay.

Lipreading Lesson #24
Case Study #2

Observation Film #25

The guest teacher gives the test in which the children are required to mark the correct foods picture in a test booklet. (See O.F. #27 for classroom teacher.) No cueing or sound is used. This film offers a good view of the test booklet.

The girl watched the teacher closely, then selected the picture. She followed the instructions well and appeared to enjoy the test.

Lipreading Lesson #13
Case Study #10
Case Study #8

Observation Film #26

The response film over the single word series is shown here as presented by the guest teacher. No visual clues are given (See O.F. 13 & 20.)

Case Study #10 seemed thoroughly to enjoy his task. He cooperated well, studying the teacher's face and then making deliberate responses.

The little girl, Case Study #10, made an error in placing objects but caught it on a later response. She confused "doll" and "car." Her attention was unwavering. She made another error on "car" and "doll" and showed great disgust with herself. She placed the objects correctly at the end.

An analysis of each child's errors could be made to give clues to individual tutoring needed.

Observation Film #27

Lipreading Lesson #25
Case Study #6

This film pictures the second of the pictorial foods tests, utilizing a different response pattern and different teacher than the first test. The classroom teacher administers the test. (See O.F. 25.) No cueing is given.

This boy watched very attentively. He was not too selective in choosing the correct pictures, however, and made several errors.

Appendix A

Section 5. Evaluator's Comments

At the start of the project, there was an awareness of the possibility that the children might tire of watching the films after repeated viewings. Often a new method of teaching will create an initial enthusiasm in the child, only to be followed by indifference or boredom in the later stages. It is most gratifying to note that such a reaction has not occurred in this learning project. The children's concentration level was lowest in the first viewing and reached and maintained a high level for all the succeeding films, with an occasional slight drop during viewing of review films. Greater familiarity with this type of instruction seemed to increase the enjoyment. The children frequently asked to view the films, and often exhibited pleased anticipation when brought to the booth. Some would even give up recess or stay after school to complete a viewing, and made no complaint.

This sustained interest was probably the result of several factors: Young children enjoy some repetition; the youngsters gradually gained an understanding of the purpose of the lessons; they were motivated by the realization that their lipreading ability would be tested by use of response films, and they were challenged by more advanced material which was gradually introduced into the project.

Appendix A

The record of sustained interest definitely indicated the potential and feasibility of this type of learning project. However, a study of the children's reactions points out some pitfalls to avoid:

1. For the majority of the children a continuous repetitious showing of one cartridge at one sitting does become boring. Best results in concentration seemed to be obtained when no more than two showings of a cartridge at one sitting were required, and as knowledge of the content increase, one showing is preferable, followed if desired by a showing of other cartridges.

2. Viewings should be brief enough to keep the child eager for more.

3. As the project is initiated, the child must be trained in proper viewing habits by being instructed to watch closely, otherwise he may observe passively in the same manner that he would watch television.

4. For elementary children, this is not a learning device that should be used without teacher supervision. The room teacher, as a rule, would select the lessons needed by the child, and tell him how many times to watch. She should be alert to any signs of boredom, and remove the child from the booth if he becomes inattentive and starts playing. Some supervision is necessary to determine if the child understands directions in response films, and is actively cooperating with instructions of the film teacher.

5. From this experiment, it appeared that words and concepts can be taught entirely by use of this teaching device. However, in actual use, a good teacher would probably try to facilitate more rapid assimilation of material by additional classroom instruction. As with all "teaching machines" the teacher should remain in commandof the learning situation. Machines should be viewed as a teacher's resource, not a teacher's substitute.

There are some definite advantages offered by this objective type of teaching:

1. For some youngsters, the semi-isolation and quiet time is very beneficial for them during a portion of the school day. It helps them regain serenity and self-control. It aids them in developing self-reliance.

2. Through the response lessons, habits of cooperation, ability and willingness to follow directions may be developed in this objective situation. These habits are beneficial to all children, but are especially needful to the more rebellious child who dislikes authority, but can accept it more easily from the impersonal machine than from an actual person.

4. Repetition of material through repeated showings might help brain-damaged children where brain-speech channels are affected.

5. The sense of accomplishment gained through immediate verification and reinforcement of right response is desirable according to the presently accepted laws of learning.

6. There are possibilities for discovery of individual weaknesses by analysis of a child's responses. (Films could be designed which would be quite effective in this area.)

7. Use of films makes it possible to direct attention to the particular aspects of lipreading activity, such as, close-ups of lips, jaw movements, facial expression, etc. This technique needs further study and investigation.

8. The subject's attention can be focused directly on the visual scene, without the distractions that occur in a classroom situation.

9. Students can advance at their own pace.

10. The concentrated use of props to convey one word or idea should train the child's ability to observe essentials when lipreading in other situations.

11. The student may feel less pressure in this type of lipreading lesson and so relax and learn more readily.

12. Child can be in complete control of desired degree of amplification.

13. Use of mirrors thatare in booth could aid in proper speech formation.

These advantages indicate that this type of learning device, planned and used wisely, can greatly facilitate classroom instruction.

The following are some additional opinions based on observation of the children's reactions to the instructional materials:

1. Material must be challenging and geared to child's interests.

2. Material must not be too advanced for child's level of achievement.

3. Abstract material is not so interesting to those with lower intelligence.

4. A simple, direct approach, with no unnecessary words, must be used to present abstract ideas. This possibility presents a great challenge to film producers, and a great opportunity for learning to the capable, hard of hearing student.

In this project it appeared that the response films were the motivating key to learning lipreading. They taught concentration, made it easy to watch teacher's lips, increased desire to learn by providing a sense of accomplishment, and held the child's interest well.

The following observations were made while the children were viewing response film:

1. The motivation for any one response film decreased if the film was repeated more than twice at one sitting.

2. The children watched for cues whenever possible and followed pattern established. This tendency was considered in judging responses or it "contaminated" accurate evaluation of lipreading gains.

3. Some of the children were instructed to speak aloud on films requiring verbal responses or they tended to view passively and not identify with the film.

4. The teacher did not attempt to coach the child while he was viewing a response film. The teacher stood by and encouraged the child, but explicit previewing instructions were much more satisfactory as they did not distract child from task. It was felt that interruptions by a teacher while child was viewing might make some subjects hesitant and fearful of making errors.

In summary this study indicates that:

A. Acoustically handicapped children at the elementary level will view films teaching lipreading for extended periods of time and, in general, maintain a high level of interest.

B. Elementary students will participate eagerly and with high motivation when response techniques are utilized.

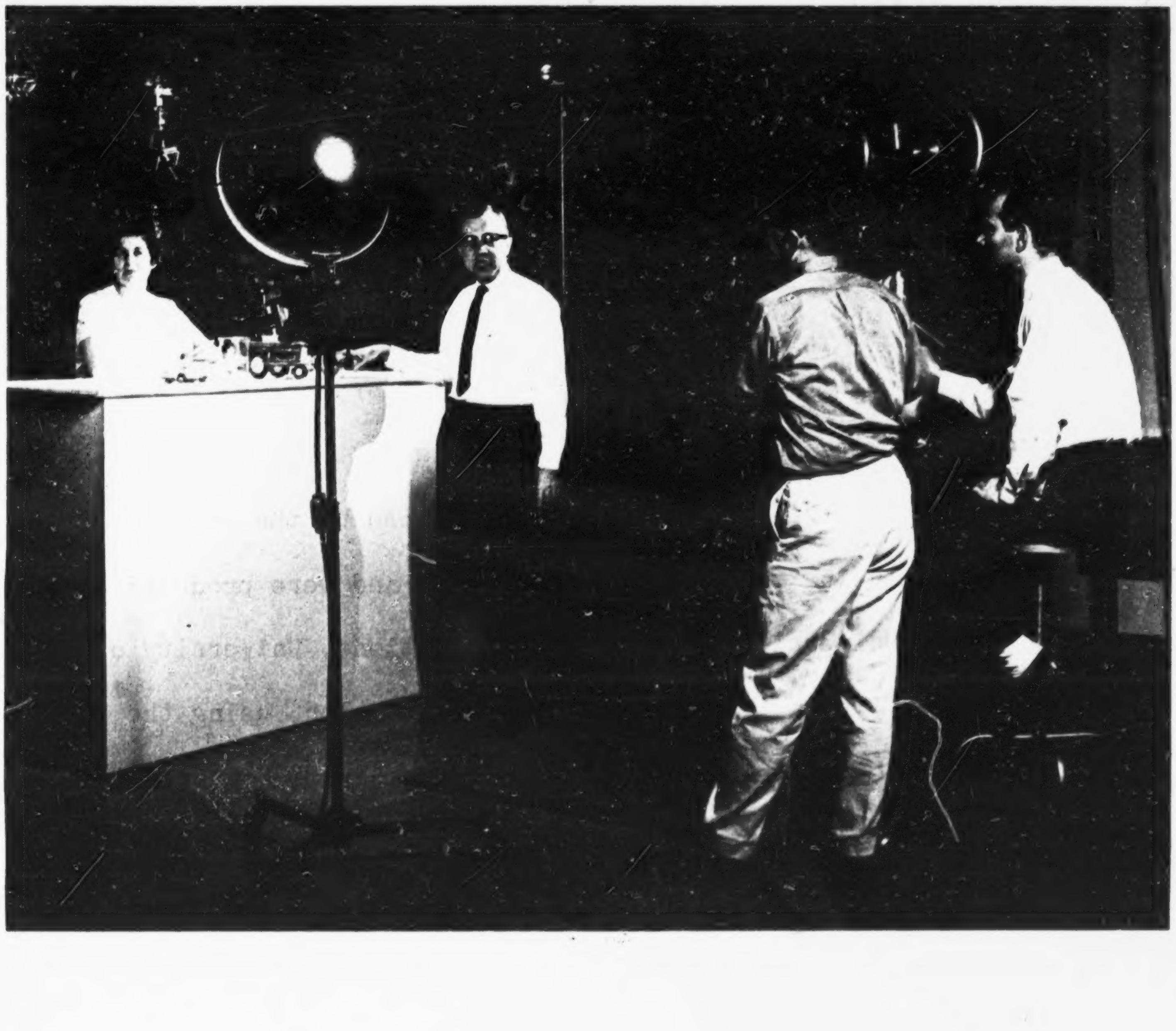
C. Through use of film lessons, it is possible to teach lipreading in a learning laboratory without the physical presence of a teacher.

Appendix A

D. Through use of well-planned film lessons, it is possible to teach abstract concepts and clarify existing ideas, if geared to the child's level of comprehension.

E. At the elementary level, some guidance and direction by a teacher is desirable for best utilization of this learning device.

APPENDIX B
MOTION PICTURE PRODUCTION



APPENDIX B

Motion Picture Production

Two distinct types of films were produced as a part of the feasibility study. Twenty-five 8mm sound, color, instructional films were designed as the basic materials for the experimental study. These films were planned with a presentation, review, response, or a combined format. The reactions of the students to these films were the bases for the report of feasibility. The second type was the twenty-seven 16mm sound, black and white, observation films which served as visual proof of the students' behavior. This documentary evidence was photographed periodically at the learning laboratory.

The instructional films were planned by the project director, in consultation with the film teachers, and were produced by the staff of University Photographic Productions, University of Nebraska. These films were shot in 16mm color, using the double-system method of sound recording, on Ektachrome Commercial film. An Auricon 1200 camera and a Stancil-Hoffman magnetic film recorder were the main two pieces of production equipment. The instructional films were shot in the motion picture sound stage at the University of Nebraska.

A 16mm color internegative was made from each edited color reversal original. Special effects were incorporated at the time of the printing of the internegative. Eight millimeter prints were reduced directly from the color internegative and a magnetic sound stripe applied. Sound was transferred directly to the stripe from the 16mm magnetic film track. All processing was done by George W. Colburn Laboratory, Chicago, Illinois. Each 8mm release print was given Vacuumate Corporation's No-En Treatment to insure trouble free projection of continuous loop films. Prints were mounted in the Fairchild cartridges by the audiovisual technician in the Bureau of Audiovisual Instruction, University of Nebraska.

One of the instructional films employed the autostop feature of the projector and was coded to shut off the machine at the appropriate time. A regular 16mm film notcher was used to cut the film at the designated spot.

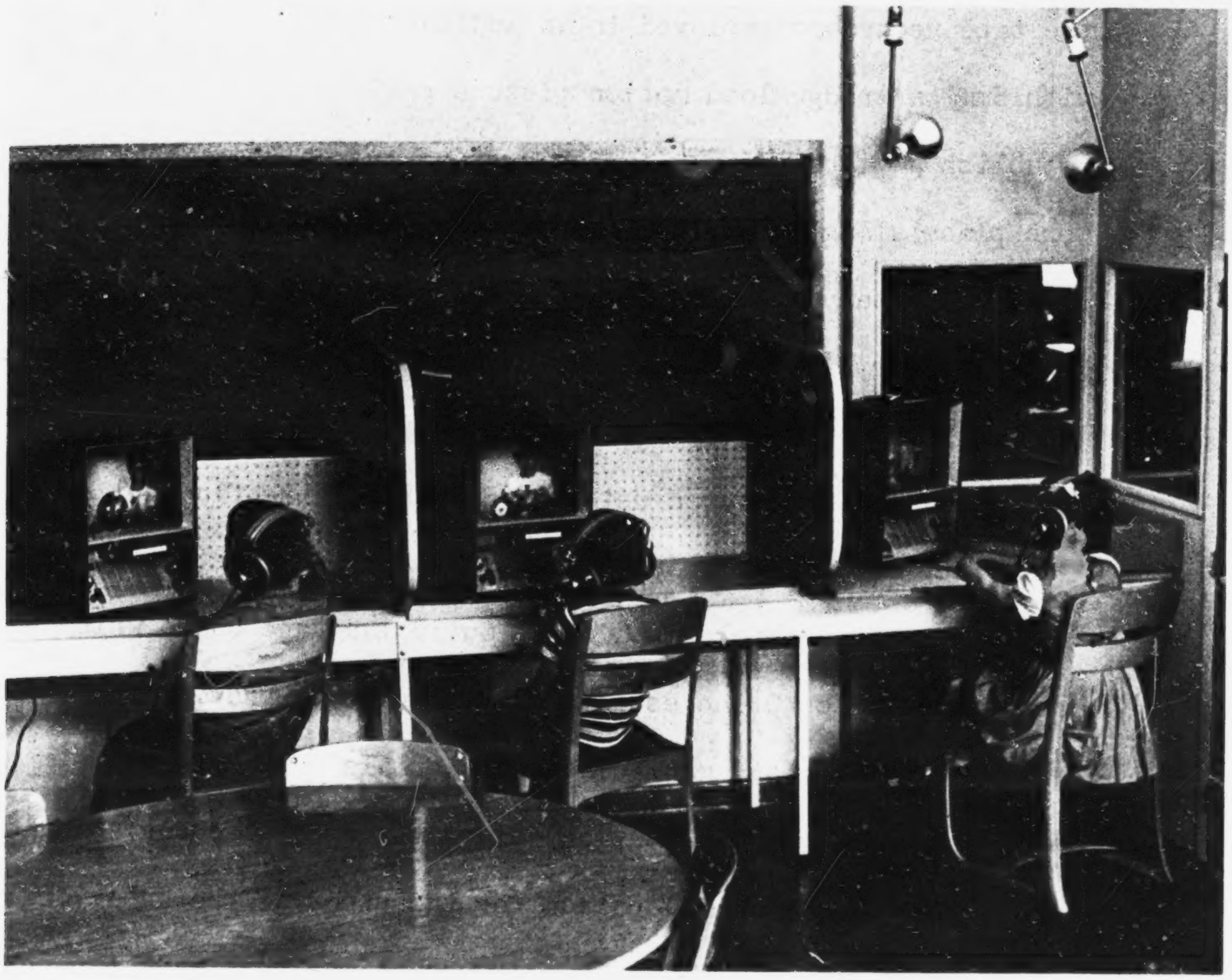
The observation films were designed to record the stimulus (film teacher teaching) and the response (student viewer reacting). Simultaneously with the filming of the color instructional films, a split-screen black and white version was also made. The camera was masked so that the film teacher appeared only in the left half of the frame (A roll). The reactions of the student viewing the instructional film at the learning laboratory was recorded on the right half of another film (B roll). The two parts of the separate production were printed together in the final release film.

Appendix B

A multi-cam system of photography was used to film the lipreading lesson at the time of the studio production. An Auricon 600, loaded with Plus-x reversal film, was set up beside and run concurrently with the color camera. The common sound track was recorded on the Stancil-Hoffman magnetic recorder previously mentioned. To film the student in the learning laboratory, a special camera room was constructed adjacent to one of the booths in the learning laboratory. One-way mirrors were installed at the proper position to permit undetected observation and film production. A single bounce reflector flood provided the necessary light level to overcome the density of the one-way glass. Single system recording of the sound from the lesson film being studied by the child was made to provide a sync-track to match with the original magnetic track. The two films, the film teacher teaching and student viewer reacting, were then matched and edited into A and B printing rolls. Prints were made on reversal duplicating stock in a Bell and Howell printer, with the sound electroprinted from the original 16mm magnetic track. A mask was used in the printer to first print the A roll and then moved to the other half of the aperture to print the B roll. This split-screen technique permits an audience to study the teacher's actions (stimulus) and the resulting student reactions (response).

The observations films were photographed, processed, edited and printed by University Photographic Productions.

APPENDIX C
LEARNING LABORATORY SPECIFICATIONS



APPENDIX C

Learning Laboratory Specifications

The learning laboratory was designed to pattern recent developments in foreign language laboratories, except that the tape recorders employed in an auditory system were replaced with 8mm cartridge load motion picture projectors in order to establish a visual communication system. Three laboratory booths were placed along one wall of the regular classroom in which the lower elementary acoustically handicapped children were taught. The laboratory functioned as another instructional resource in the daily educational program of the children. Refer to the accompanying diagram for a detailed drawing of the floor plan.

Each booth was equipped with projector, headset, and amplifier. The cubicle used was a Guild language booth which had been extended to 40 inches in width in order to provide ample space for writing and manipulating materials in the response sequences. One student station joined the special observation booth and served as the location for the study of the behavioral reactions of the children. These observations were made through one-way mirrors.

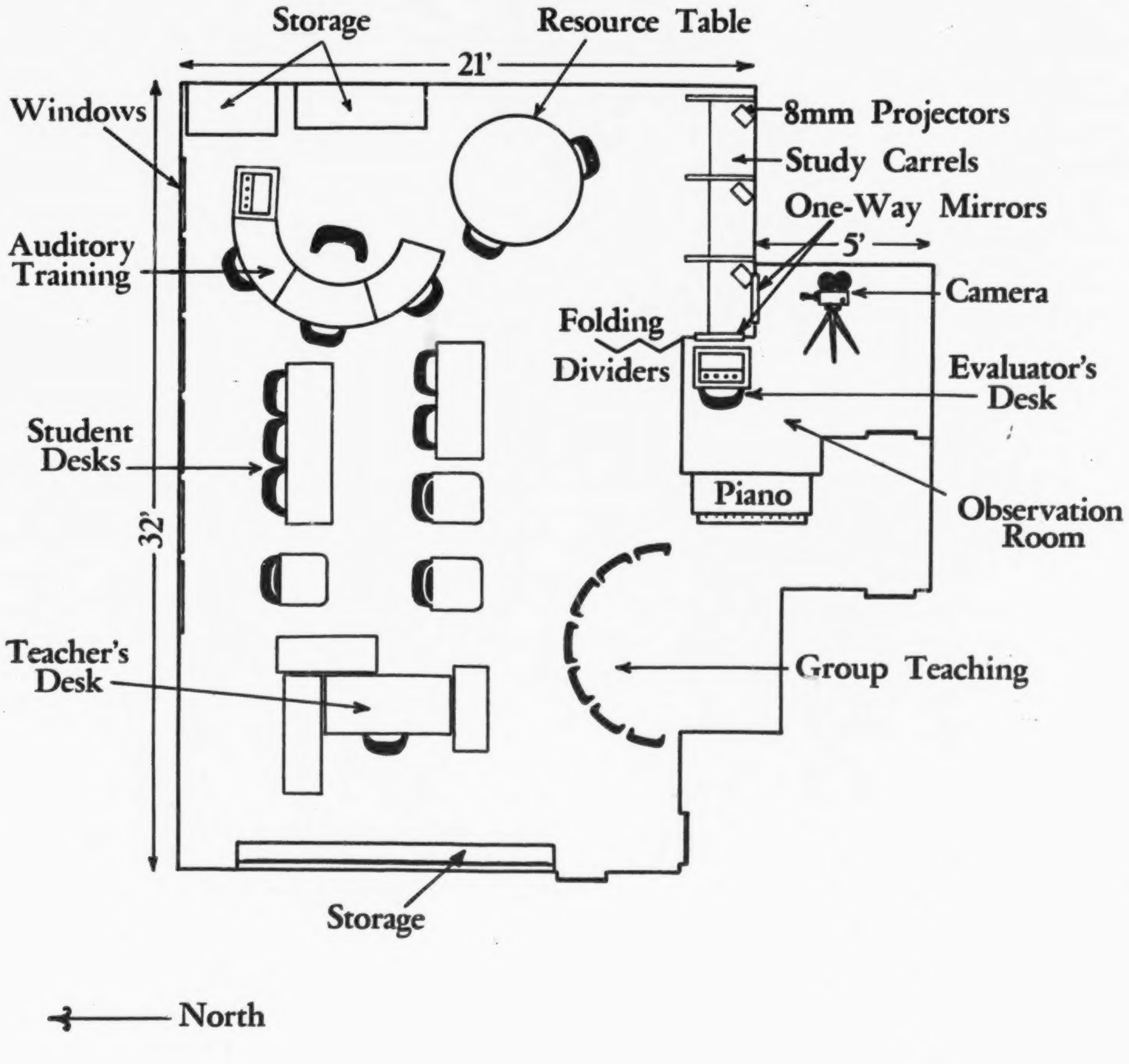
The projector in each booth was the self-contained Fairchild Mark IV which was capable of projecting pictorial information on an integral 8" x 10½" rear screen. Synchronized sound was reproduced from a magnetic playback head. The machine used a speed of 24 frames per second to minimize flutter and furnish improved magnetic recording characteristics. The optical system utilized a high efficiency 8 volt, 50 watt prefocused lamp, an f/1.4, 7.5mm coated lens with high quality front reflecting surface mirrors. The sound amplifier was completely solid state, frequency response of 80 to 7000 c.p.s., maximum of 3 watts output, terminated at the built-in speaker or a jack for external speaker. Sound was instantaneous with the starting of the projector.

The film used was an endless loop, cartridge-loaded 8mm stock with a magnetic sound stripe applied. The sound and picture were automatically synchronized by a 28 frame separation. The cartridge was a Fairchild FM 400 maximum capacity 540 ft., giving 30 minutes of viewing time, using thin base black and white film. Using conventional black and white or color film the capacity was reduced to 400 ft., giving 22 minutes of viewing time. The cartridge was merely inserted into the projector and no additional threading was necessary. The starting of the projector was controlled by one lever. Separate controls were provided for volume, focus, and frame.

For the purpose of this project the audio output was fed into an AV Electronic Headmaster 95, model AV-250, headphone/microphone/amplifier combination. This unit contained a three transistor amplifier for microphone and program material, integral with one earphone case. Two separate volume controls were provided. The earphone transducers were dynamic elements with a nominal impedance of 8 ohms each, connected in series. Program frequency response was 40 to 20,000 c.p.s. ± 2 db. The microphone was a ceramic type headset boom mounted, with a frequency response from 60 to 20,000 c.p.s. ± 2 db. The amplifier required 26 ma at 20 volts DC furnished through the single four conductor cable from a remote power source. The power supply was a solid state unit using four transistors and four rectifier diodes in a full wave, low ripple system. Input was 115 volts AC. Output could be varied from 18 to 27 volts DC, 1.75 to 2 amps.

A special booth, which measured approximately 7' x 7' was built at Prescott School to permit the undetected observation of the students by either the evaluator or the motion picture camera. The plan specified the installation of two one-way mirrors which provided either a front or profile view of the students' responses to the instructional film. The power supply and the master on and off switches were located in the observation booth. A work table and chair were provided in the booth for the evaluator. Space for the hidden camera was also planned.

Lower Elementary Classroom
Hard of Hearing Unit
Prescott School
Lincoln, Nebraska


Storage
Resource Table
21'
Windows
8mm Projectors
Study Carrels
One-Way Mirrors
5'
Auditory Training
Camera
Folding Dividers
Evaluator's Desk
Student Desks
Piano
Observation Room
32'
Teacher's Desk
Group Teaching
Storage
North

FLOOR PLAN

APPENDIX D

SAMPLE INFORMATION AND DOCUMENTATION FORMS

Parent Interview Record

School Information Record

School Evaluation Record

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Appendix D

PARENT INTERVIEW RECORD

Name: ______________________________ Birth Date: ____________
mo. day year

Parents: ______________________________ Address: ____________

Occupation: (father) ______________________ ____________

(mother) ______________________

No. siblings: (List name, sex, age)

	Name	Age	Sex	Comments
1.				
2.				
3.				
4.				
5.				
6.				

Medical History

Acoustical Handicap:

Date of Onset ____________ Etiology ______________________

Prognosis ______________________________

General Health: (Including Related Defects)

Has child had colds, tonsillitis, ear trouble this school year? Yes ( ) No ( )

Describe ______________________________

Has child had to see the doctor? Yes ( ) No ( ) Dates ____________

Describe ______________________________

Medication needed? ______________________________

Is growth and development satisfactory? Yes ( ) No ( )

Record of Medical Examination:

Date ____________ Comments: ______________________

Family Doctor, Pediatrician or Otologist: ____________________

Appendix D

PARENT INTERVIEW RECORD

Personal Adjustment: (Accepts responsibility, entertains himself, etc.)

Manual Skills	always	usually	often	seldom	never
needs help putting on clothing	☐	☐	☐	☐	☐
needs help with zippers or buttons	☐	☐	☐	☐	☐
uses tableware efficiently	☐	☐	☐	☐	☐
cuts food with knife	☐	☐	☐	☐	☐
needs help brushing teeth	☐	☐	☐	☐	☐
operates television controls independently	☐	☐	☐	☐	☐
chooses manipulative toys in play (blocks, erector sets, etc.)	☐	☐	☐	☐	☐
Self-reliance					
needs reminder to do "chores"	☐	☐	☐	☐	☐
completes task when started (as "setting table")	☐	☐	☐	☐	☐
works independently at given task	☐	☐	☐	☐	☐
does errands	☐	☐	☐	☐	☐
Concentration					
is easily frustrated	☐	☐	☐	☐	☐
is easily distracted from task	☐	☐	☐	☐	☐
persists at tasks far beyond ability	☐	☐	☐	☐	☐
withdraws into self if task too difficult	☐	☐	☐	☐	☐
Response					
responds when given directions	☐	☐	☐	☐	☐
responds when asked questions	☐	☐	☐	☐	☐
actively cooperates with teacher or parent	☐	☐	☐	☐	☐
moves very slowly	☐	☐	☐	☐	☐
overactive	☐	☐	☐	☐	☐

Appendix D

PARENT INTERVIEW RECORD

Social Adjustment: (Group participation, etc.)

Out-of-School Experiences:

Family Activities

General Play Activities

Special Hobbies and Interests

Television Viewing (type and extent)

Travel

Appendix D

PARENT INTERVIEW RECORD

In-Home Education:

Instruction given by family members: (type and extent)

Instruction given by non-family members: (type and extent)

INTERVIEWER'S COMMENTS AND SUMMARY:

________________ date

____________________________ Interviewer

Appendix D

SCHOOL INFORMATION RECORD

NAME: ____________________________________ TEACHER: __________________

SCHOOL: __________________________________ CITY: _____________________

* * * * * *

Amount of Hearing Loss: ________________ Date of Test: ______________
left right

Length of Time in an Instructional Program: __________________________

Schools Attended:

Name of School	Length of Attendance	Regular or Occasional Attendance

Mental Ability Score: ___________ Chronological Age at Time of Test: _____

Test Administered: ______________________ Date Given: ______________

Reading Grade Level: ___________________ Language Development for Age: ______

Present Chronological Age: ____________ School Achievement Level: __________

COMMENTS:

__________ date

________________________________ Observer-Evaluator

Appendix D

EVALUATION RECORD

Date: __________

NAME: ______________________________

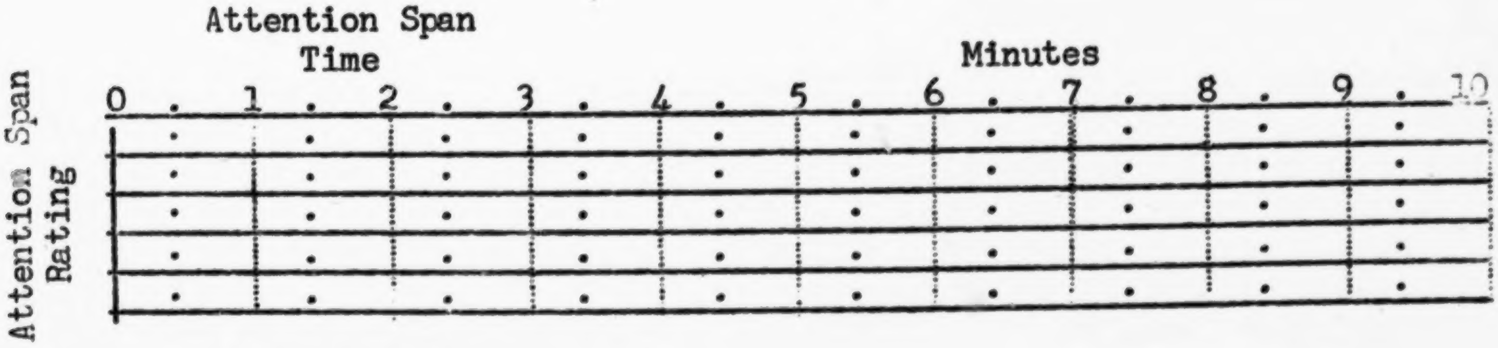
Time: __________

GENERAL ROOM ACTIVITY: ______________________________

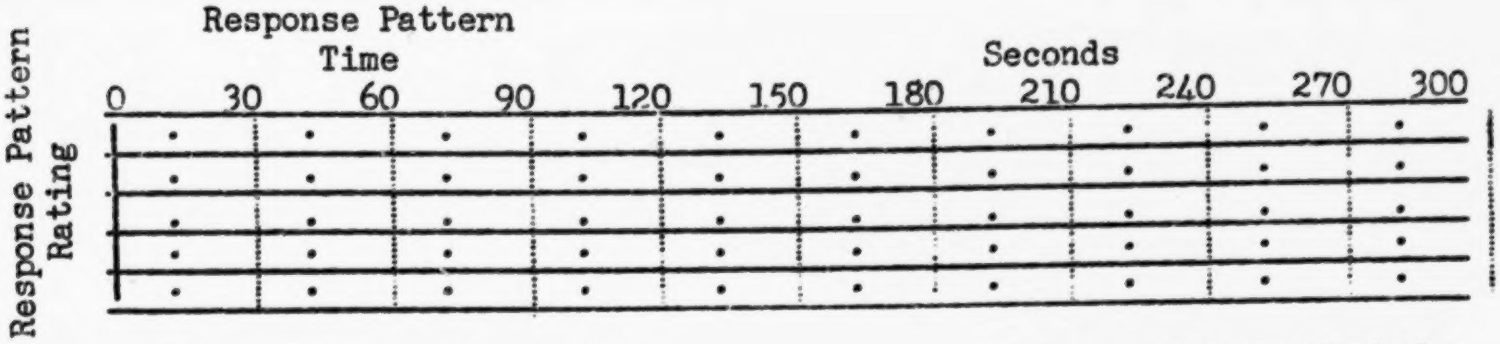
____

____

Film Cartridge # ______________ Previous No. Times Seen ________



Attention Span
Time
Minutes
0
1
2
3
4
5
6
7
8
9
10
Attention Span Rating



Response Pattern
Time
Seconds
0
30
60
90
120
150
180
210
240
270
300
Response Pattern Rating

Color Code: Each Observation
Red - First Viewing
Green- Second Viewing
Blue - Third Viewing
Brown- Fourth Viewing

Response Pattern Symbols:
x - Correct Response
o - Wrong Response
A - Anticipated Response

Rating Scale: Attention Span
5 - Intent Interest - No Distraction
4 - Prolonged Interest - Slight "
3 - General Interest - Some "
2 - Occasional Interest- Frequent "
1 - Spasmodic Interest - Considerable"
0 - No Interest - Complete "

Rating Scale: Response Pattern
5 - Immediate Response-No Hesitation
4 - Rapid Response -Slight Pause
3 - Normal Response -Some Pause
2 - Uncertain Response-WithHesitation
1 - Cued Response -Long Pause
0 - No Response

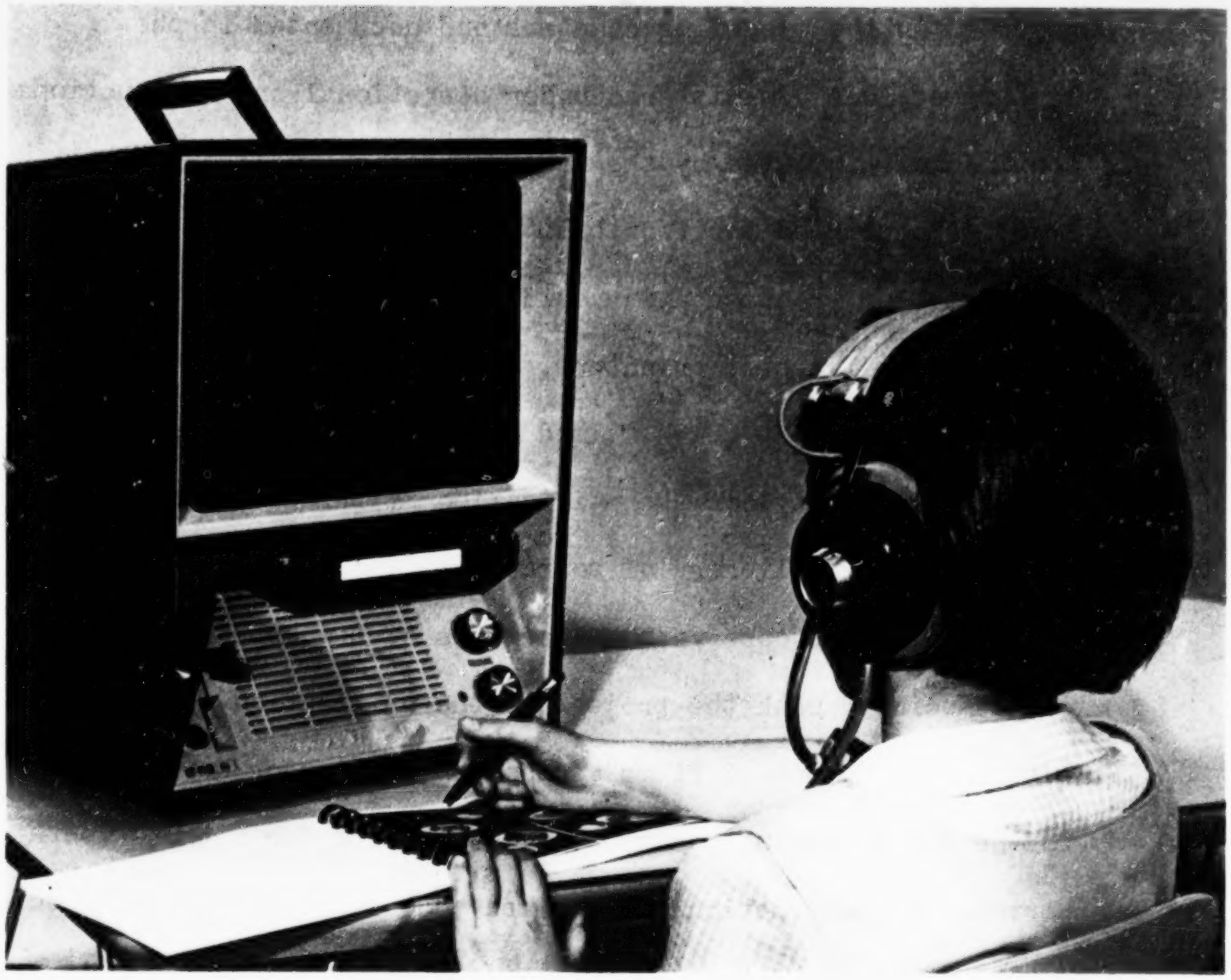
Follow-up Activity: ______________________________

____

____

APPENDIX E

FIELD STUDY



SPEECHREADING TEST

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APPENDIX E

Field Study

The feasibility study conducted at Prescott School, as reported in the preceding chapters and documented in the Appendices, was administered under operational and instructional conditions stipulated by the research design. Although the study demonstrated the feasibility of using 8mm sound films for speechreading practice and provided guidelines for future productions of a similar nature, it made no attempt to determine the earliest age at which filmed speechreading lessons might have applicability nor the utilization patterns of teachers when such a film library of source materials became accessible.

In order to observe the reactions of teachers and students not associated with the project to the utilization of these materials, one set of films and one 8mm projector were loaned to the Omaha Hearing School, Omaha, Nebraska for a three month period. No restrictions were given and no specific requirements were imposed. The teachers were requested, however, to keep a frequency-of-use chart and to make notations about the behavioral reactions of the children while studying the films.

This appendage to the basic study was not structured to yield research data for statistical analysis or comparative interpretation, but was planned as operational research giving evidence of practicability and functional design. The concept of having a film library as accessible to children as a book library has been, is a new dimension in teaching. To further compound the situation, the idea that lower elementary children can handle their own film showings in a self-study environment is one of the emerging innovations as instructional technology begins to make its impact on teaching.

Contrary to the establishment of the laboratory in the classroom, as was the case at Prescott School, the laboratory at the Omaha Hearing School was in a separate room -- one normally used for auditory training and testing, but a room which did have one-way mirrors for observation. The plan of operation was very flexible. As classroom instruction permitted, the teachers would send one child at a time to the special room for the filmed lessons. The teacher, or more often in this experimental situation, the supervisor, would observe the child and write comments about his reactions.

Two groups of children participated in this pilot study. One group was the kindergarten class of seven children, ages five years and four months to five years and ten months. Their hearing losses would be classified as follows: three children were severely hard-of-hearing; three children were severely deaf; and one child was profoundly deaf. Their mental ability as measured by the Nebraska Test of Learning Aptitude was one child below average, two children average, two children above average, and two children superior for their age as compared with other deaf children. The class itself was a cross-section of the deaf population.

The six other children were in the first grade. Their ages ranged from five years and nine months to seven years and nine months with the following division of hearing losses: one child, hard-of-hearing; three children, severely hard-of-hearing; and two children, severely deaf. Their mental ability as compared with other deaf children when measured by the Nebraska Test of Learning Aptitude was two each as average, above average, and superior for their ages.

Complete case histories, as maintained on each child in the basic studies, were not kept for these children, but some basic recorded data and the evaluation sheets describing their viewing habits are also on file in the project office.

To simplify the study only the multiple word approach series was used in this experiment. This film series on the food vocabulary unit, identified as numbers 20-25 in Section 2 of Appendix A, consisted of three speechreading practice lessons -- breakfast, lunch, and dinner -- a review film, and two response films. The pictorial test booklets were again employed as the instrument for measuring comprehension.

The children responded to the films in a manner similar to the reactions of the children at Prescott School. The composite viewing records of the children in the first grade indicated the highest level of attention classified at the "intent" level for film #20 (breakfast); at the "prolonged" interest level for film #21 (lunch); at the highest level again for film #22 (dinner) and at the "prolonged" interest rating on the review film.

The kindergarten children were not quite as attentive as their first grade schoolmates and rated as follows: "general" interest or average attention on the five point rating scale for film #20 (breakfast); "prolonged" interest on films #21 (lunch) and #22 (dinner); and "general" interest on the review film #23. The viewing habits of the younger children fluctuated much more than did the first grade children.

After studying the four filmed lessons, the children took one pictorial foods speechreading test. This film (#24) and the procedure for using it have been described previously. No attempt was made to measure achievement since these children were not a part of the research population and the purpose of the exercise was to observe their reactions to the situation, their ability to follow directions and their adeptness at taking their own test.

Some of the children performed this task with ease; others found the pace of the test to be too fast. Again the younger children had the greatest difficulty. Of the twenty-one test items in this exam, the first grade children only missed an average of three questions and the kindergarten children missed an average of seven. In both cases the items usually missed were the paired foods at the close of the film test.

Another facet of the study, which was of particular interest to the researcher, was determining an indication as to the earliest age at which these children could operate their own 8mm projector. Since the operation of the equipment, loading the film cartridge into the machine and controlling your own lesson, is a critical aspect of this type of self-study, four children from the pre-school class were permitted to see the first film that is presented to all children on how to operate the projector. This observation was intended as a means of finding the earliest age at which they could handle their own film showings.

Two children as young as 3½ years of age had no problem in operating the projector after only one viewing of the instructional film on equipment operation. The four year olds handled the machine with much greater ease and appeared to gain much more from the speechreading lessons than did the younger children. There is nothing conclusive about this statement, but it does reveal the need for a study to determine the earliest age at which deaf children can benefit most from independent study.

Since the supervisor of the school, Mrs. Dorothy Beal, personally observed most of the children using this filmed materials, the researcher asked her to prepare a statement outlining her thoughts, comments, and suggestions. Her resume follows:

> Four or five year olds very readily learned to handle the film, load and unload the machine and operate on and off switches, but most of them did not grasp the principle of adjusting the volume dial without additional instruction.
>
> With three to five year olds, optimum time for good attention appeared to be ten to twelve minutes. Fifteen to twenty minutes for six and seven year age level.
>
> There appeared to be better attention and retention when two successive films were viewed rather than a repetition of the same film.
>
> Films requiring more participation and less passive watching might result in a more effective learning situation.
>
> Test film on foods appeared to move a little too fast for the majority. They needed some sort of a break for adjustment to identifying, marking and turning the page.
>
> For the four and five year olds, the idea of following direction on the test film did not carry over well. In most cases, the supervisor had to give additional instruction.
>
> The film for teaching operation of the machine may be too long. Fewer repetitions before the final demonstration might be considered.
>
> In general, children ages three through six appeared to be more sensitive to peripheral distractions. Therefore, if viewing occurred within the classroom, it would seem better to have the machines in booths or other contained area in the room.
>
> Lighting appears to make a difference.
> a. Bright overhead light permits greater awareness of distractions.
> b. Light completely off creates some apprehension.
> c. Subdued light seems to contribute to attention.

> As a teaching resource, films of this type should be of definite value, particularly where a teacher has no assistance. However, in a private facility such as ours, cost of machines, films, upkeep and replacement could possibly be prohibitive. Since I have no cost figures, I cannot make a firm judgment in this respect but it is a factor to be considered.

It is difficult for a school to field test an instructional innovation without becoming completely involved in the study. The researcher, however, is most grateful to the instructional staff of the Omaha Hearing School for permitting this brief intrusion and allowing the children to be the subjects of this parenthetical study.

Several generalizations could be made in summary. Filmed speechreading lessons need to be an integral part of the unit being studied and their content closely allied to the topic. The concept of viewing films needs to be altered to one of studying films in all its definitive dimensions as we now conceive of children studying books. The design of the materials develops the involvement of the learner and the utilization by the teacher directs the instructional patterns. Obviously as technological learning devices are applied to deaf education, teaching procedures and comprehensive in-service education programs for the staff become of paramount importance.

The idea of a self-operational laboratory for the teaching of speechreading is not an entirely new concept since the language laboratory performs a similar function in the teaching of foreign language to normal students. As was true with foreign language teachers, it will take some adjustment in teaching procedures if the laboratory is to be utilized to its fullest. Considerable study will have to be given to the physical location of the laboratory, whether it be in the classroom (which the researcher favors), or in a separate room at school (which certainly has many drawbacks), or in the residential hall/home (which may be of most benefit to parent and child).

As production of educational materials designed specifically to teach the deaf increases and as applications of innovative uses of instructional technology in deaf education accelerates, field studies in depth, encompassing various types of instructional programs for the deaf and employing the total spectrum of media, become a vital area of research and dissemination.